THE ENGLISH HVSBANDMAN.

The first Part:

CONTAYNING

the Knowledge of the true Nature of euery Soyle within this Kingdome: how to Plow it; and the manner of the Plough, and other Instruments belonging thereto.

TOGETHER WITH THE

Art of Planting, Grafting, and Gardening after our lateſt and rareſt faſhion.

A worke neuer written before by any Author: and now newly compiled for the benefit of this KINGDOME.

By G. M.

Bramo aſſai, poco, ſpero nulla chieggio.

LONDON:
Printed by *T. S.* for *Iohn Browne*, and are to be ſould at his ſhop in Saint *Dunſtanes* Church-yard.
1613.

TO THE RIGHT HONOVRABLE, and his ſingular good Lord, the Lord *Clifton*, Baron of LAYTON.

IT was a cuſtome (right Honorable, and my moſt ſingular good Lord) both amongſt the auntient *Romans*, and alſo amongſt the wiſe *Lacedemonians*, that euery idle perſon ſhould giue an account of the expence of his howers: Now I that am moſt idle, and leaſt imployed in your Familie, preſent here vnto your Lordſhips hands an account of the expence of my idle time, which how well, or ill, it is, your Noble wiſedome muſt both iudge and correct; onely this I am acertain'd, that for the generall rules and Maximes of the whole worke, they are moſt infallibly true, and perfectly agreeing with our Engliſh climate. Now if your Lordſhip ſhall doubt of the true taſt of the liquor becauſe it proceedeth from ſuch a veſſell as my ſelfe, whom you may imagine vtterly vnſeaſoned vvith any of theſe knowledges, beleeue it (my moſt beſt Lord) that for diuers yeeres, wherein I liued moſt happily, I liued

a Husbandman, amongſt Husbandmen of moſt excellent knowledge; during all which time I let no obſeruation ouer-ſlip me: for I haue euer from my Cradle beene naturally giuen to obſerue, and albe I haue not that oylie tongue of oſtentation which loueth euer to be babling all, and ſomewhat more then it knoweth, drawing from ignorance admiration, and from wiſedome laughter, filling meale-times with much vnprofitable noyſe; yet I thanke my maker I haue a breaſt which containeth contentment inough for my ſelfe, and I hope much benefit for the whole Kingdome; how euer or whatſoeuer it is, it is all your Lordſhips, vnder the couert of whoſe fauourable protection if it may finde grace it is the vttermoſt aime whereunto my wiſhes aſpire, nor ſhall I feare the malignitie of the curious, for it is not to them but the honeſt plaine Engliſh Husbandman, I intend my labours, vvhoſe defender you haue euer beene, and for whoſe Honorable proſperitie both they and I will continually pray.

Your honours in all
ſeruiceable humbleneſſe,

G. M.

The Epiſtle to the generall and gentle Reader.



Although (generall reader) the nature of this worſt part of this laſt age hath conuerted all things to ſuch vildneſſe that whatſoeuer is truely good is now eſteemed moſt vitious, learning being derided, fortitude drawne into ſo many definitions that it conſiſteth in meere words onely, and although nothing is happy or proſperous, but meere faſhion & oſtentation, a tedious fuſtian-tale at a great mans table, ſtuft with bigge words, with out ſence, or a mimicke Ieſter, that can play three parts in one; the Foole, the Pandar and the Paraſit, yet notwithſtanding in this apoſtate age I haue aduentured to thruſt into the world this booke, which nothing at all belongeth to the ſilken ſcorner, but to the plaine ruſſet honeſt Husbandman, for whoſe particular benefit, and the kingdomes generall profit, I haue with much paine, care and induſtry, paſſed through the ſame. Now for the motiues which firſt drew me to vndertake the worke, they were diuers: as firſt, when I ſaw one man tranſlate and paraphraſe moſt excellently vpon Virgils Georgickes, *a worke onely belonging to the Italian climbe, & nothing agreeable with ours another tranſlates* Libault & Steuens, *a worke of infinit excellency, yet onely proper and naturall to the French, and not to vs: and*

another takes collections from Zenophon, *and others; all forrainers and vtterly vnacquainted with our climbes: when this I beheld, and ſaw with what good liking they were entertained of all men; and that euery man was dumbe to ſpeake any thing of the* Husbandry *of our owne kingdome, I could not but imagine it a worke moſt acceptable to men, and moſt profitable to the kingdome, to ſet downe the true manner and nature of our right Engliſh* Husbandry, *our ſoyle being as delicate, apt, and fit for increaſe as any forraine ſoyle whatſoeuer, and as farre outgoing other kingdomes in ſome commoditie, as they vs in other ſome. Hence, and from theſe conſiderations, I began this worke, of which I haue here ſent thee but a ſmall taſt, which if I finde accepted, according to mine intent, I will not ceaſe (God permitting mee life) to paſſe through all manner of Engliſh* Husbandry *and* Huswifery *whatſoeuer, without omiſſion of the leaſt ſcruple that can any way belong to either of their knowledges. Now gentle reader whereas you may be driuen to ſome amazement, at two titles which inſue in the booke, namely, a former part before the firſt, and the firſt part, you ſhall vnderſtand that thoſe firſt ſheetes were detained both from the Stationer and me, till the booke was almoſt all printed; and my ſelfe by extreame ſickneſſe kept from ouer-viewing the ſame, wherefore I muſt intreate your fauour in this impreſſion and the rather in as much as there wanteth neither any of the words or matter whatſoeuer*: Farewell.

Thine

G. M.

A FORMER PART, before the first Part: Being an absolute perfect Introduction into all the Rules of true Husbandry; and must first of all be read, or the Readers labour will be frustrate.

Chap. I.

The Proem of the Author. What a Husbandman is: His Vtilitie and Necessitie.

IT is a common Adage in our English speech, that a man generally seene in all things can bee particularly perfect or compleate in none: Which Prouerbe there is no question will both by the curious and enuious be heauily imposed vpon my backe, because in this, and other workes, I haue delt with many things of much importance, and such as any one of them would require a whole liues experience, whereas neither my Birth, my Education, nor the generall course of my life can promise no singularitie in any part of those Artes they treate of: but for suggestions (the liberty whereof the wisedome of Kings could neuer bridle) let them poison themselues with their

owne gall, they shall not so much as make me looke ouer my shoulder from my labour: onely to the curteous and well meaning I giue this satisfaction, I am but onely a publique Notary, who record the most true and infallible experience of the best knowing Husbands in this land.

Besides, I am not altogether vnlerne in these misteries I write of: for it is well knowne I followed the profession of a Husbandman so long my selfe, as well might make me worthy to be a graduate in the vocation: wherein my simplicitie was not such but I both obserued well those which were esteemed famous in the profession, and preserued to my selfe those rules which I found infallible by experience. Virgill was an excellent Poet, and a seruant, of trusty account, to Augustus, whose court and study-imployments would haue sayd he should haue little knowledge in rurall businesse, yet who hath set downe more excellently the manner of Italian Husbandry then himselfe, being a perfect lanthorne, from whose light both Italie and other countries haue seene to trace into the true path of profit and frugalitie? Stevens and Libault, two famous Physitions, a profession that neuer medleth with the Plough, yet who hath done more rarely: nay, their workes are vtterly vncontrolable touching all manner of french Husbandry whatsoeuer; so my selfe although by profession I am onely a horse-man, it being the predominant outward vertue I can boast of, yet why may not I, hauing the sence of man, by the ayde of obseruation and relation, set downe all the rules and principles of our English Husbandry in as good and as perfect order as any of the former? there is no doubt but I may and this I dare bouldly assure vnto all Readers that there is not any rule prescribed through this whole worke, but hath his authoritie from as good and well experienced men, in the Art of which the rule treateth, as any this kingdome can produce: neither haue I beene so hasty, or willing, to publish this part as men may imagining, for it is well knowne it hath

laine

laine at reſt this many yéeres, and onely now at the inſtigation of many of my friends is bolted into the world, to try the cenſure of wits, and to giue aide to the ignorant Huſbandman. Wherefore to leaue off any further digreſſion, I will fall to mine intended purpoſe: and becauſe the whole ſcope of my labour hath all his aime and reuerence to the Engliſh Huſbandman, I will firſt ſhew you what a Huſbandman is.

The definition of a Husbandman.

A Huſbandman is he which with diſcretion and good order tilleth the ground in his due ſeaſons, making it fruitfull to bring forth Corne, and plants, meete for the ſuſtenance of man. This Huſbandman is he to whom God in the ſcriptures giueth many bleſſings, for his labours of all other are moſt excellent, and therefore to be a Huſbandman is to be a good man; whence the auntients did baptiſe, and wee euen to this day doe ſeriouſly obſerue to call euery Huſbandman, both in our ordinary conference and euery particular ſalutation, goodman ſuch a one, a title (if wee rightly obſerue it) of more honour and vertuous note, then many which precede it at feaſts and in gaudy places.

The Vtilitie of the Husbandman.

A Huſbandman is the Maiſter of the earth, turning ſterrilitie and barrainenеſſe, into fruitfulneſſe and increaſe, whereby all common wealths are maintained and vphelo, it is his labour which giueth bread to all men and maketh vs forſake the ſocietie of beaſts drinking vpon the water ſprings, feeding vs with a much more nouriſhing liquor. The labour of the Huſbandman giueth liberty to all vocations, Arts, miſteries and trades, to follow their ſeuerall functions, with peace and induſtry, for the filling and emptying of his barnes is the increaſe and proſperitie of all their labours. To conclude, what can we ſay in this world is profitable where Huſbandry is wanting, it being the great Nerue and Sinew which houldeth together all the ioynts of a Monarchie?

Of the neceſſitie of a Husbandman.

Now for the neceſſitie, the profit inferreth it without any larger amplification: for if of all things it be moſt pro-

ſtable, then of all things it muſt néeds be moſt neceſſary, ſith next vnto heauenly things, profit is the whole aime of our liues in this world: beſides it is moſt neceſſary for keeping the earth in order, which elſe would grow wilde, and like a wilderneſſe, brambles and weeds choaking vp better Plants, and nothing remayning but a Chaos of confuſedneſſe. And thus much of the Huſbandman his vtility and neceſſitie.

Chap. II.

Of the ſituation of the Husbandmans houſe; the neceſſaries there to belonging, together with the modell thereof.



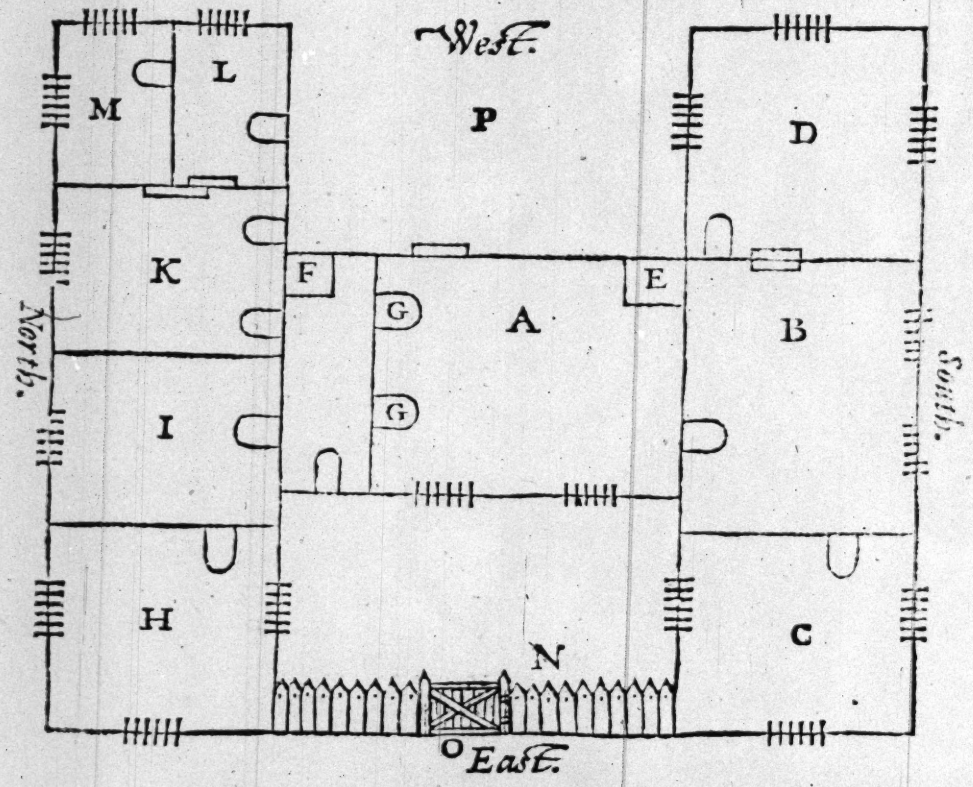
Ince couerture is the moſt neceſſarieſt thing belonging vnto mans life, and that it was the firſt thing that euer man inuented, I thinke it not amiſſe firſt to beginne, before I enter into any other part of Huſbandry, with the Huſbandmans houſe, without which no Huſbandry can be maintained or preſerued. And albeit the generall Huſbandman muſt take ſuch a houſe as hée can conueniently get, and according to the cuſtome and abilitie of the ſoyle wherein he liueth, for many countries are very much vnprouided of generall matter for well building: ſome wanting timber, ſome ſtone, ſome lime, ſome one thing, ſome another: yet to that Huſbandman whom God hath enabled with power both of riches and euery other neceſſary fit to haue all things in a comely conuenientneſſe about him, if he deſire to plant himſelfe decently and profitable, I would then aduiſe him to chuſe for his ſituation no high hill, or great promontary (the ſeate of Princes Courts) where hée may be gazed vpon by the eye of euery traueller, but ſome pretty hard knole of conſtant and firme earth, rather aſſending then deſcending, free from the danger of water, and being in-

uironed

uironed either with some pretty groues, of tall young spiers, or else with rowes of greater timber, which besids the pleasure and profit thereof (hauing wode so neare a mans doore) the shelter will be most excellent to keepe off the bleaknesse of the sharpe stormes and tempests in winter, and be an excellent wormestall for cattell in the summer. This house would be planted, if possible, neare to some riuer, or fresh running brooke, but by no meanes vpon the verge of the riuer, nor within the danger of the ouerflow thereof: for the one is subiect to too much coldnesse and moisture, the other to danger. You shall plant the face, or forefront, of your house vpon the rising of the Sunne, that the vigor of his warmth may at no time depart from some part thereof, but that as he riseth on the one side so he may set on the other. You shall place the vpper or best end of your house, as namely, where your dining Parlor and cheifest romes are, which euer would haue their prospect into your garden, to the South, that your buttery, kitching and other inferiour offices may stand to the North, coldnesse bringing vnto them a manifold benefit. Now touching the forme, fashion, or modell of the house, it is impossible almost for any man to prescribe a certaine forme, the world is so plentifull in inuention and euery mans minde so much adicted to nouelty and curiosity, yet for as much as it is most commended by the generall consent of all the auntients, and that from the modell of that proportion may be contracted and drawne the most curious formes that are almost at this day extant, I will commend vnto you that modell which beareth the proportion of the Roman H. which as it is most plaine of all other, and most easie for conuaiance, so if a man vpon that plaine song, (hauing a great purse) will make descant, there is no proportion in which he may with best ease show more curiositie, and therefore for the plaine Husbandmans better vnderstanding I will here shew him a fac simile (for to adde a scale were needlesse in this generall worke, all men not being desirous to build of one bignesse) & this it is:

Heare

A former part of the



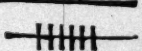
Here yon behould the modell of a plaine country mans house, without plaster or imbostore, because it is to be intended that it is as well to be built of studde and plaster, as of lime and stone, or if timber be not plentifull it may be built of courser wode, and couered with lime and haire, yet if a man would bestow cost in this modell, the foure inward corners of the hall would be conuenient for foure turrets, and the foure gauell ends, being thrust out with bay windowes might be formed in any curious manner: and where I place a gate and a plaine pale, might be either a tarrisse, or a gatehouse: of any fashion whatsoeuer, besides all those windowes which I make plaine might be made bay windowes, either with battlements, or without, but the scope of my booke tendeth onely to the vse of the honest Husbandman, and not to instruct men of dignitie, who in

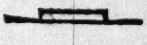
Architecture

Architecture are able wonderfully to controle me; therefore that the Husbandman may know the vse of this facsimile, he shall vnderstand it by this which followeth.

A. Signifieth the great hall.
B. The dining Parlor for entertainment of strangers.
C. An inward closset within the Parlor for the Mistrisses vse, for necessaries.
D. A strangers lodging within the Parlor.
E. A staire-case into the rowmes ouer the Parlor.
F. A staire-case into the Good-mans rowmes ouer the Kitchin and Buttery.
G. The Skreene in the hall.
H. An inward cellar within the buttery, which may serue for a Larder.
I. The Buttery.
K. The Kitchin, in whose range may be placed a bruing lead, and conuenient Ouens, the bruing vessels adioyning.
L. The Dairy house for necessary businesse.
M. The Milke house.
N. A faire sawne pale before the formost court.
O. The great gate to ride in at to the hall doore.
P. A place where a Pumpe would be placed to serue the offices of the house.


This figure signifieth the doores of the house.


This figure signifieth the windowes of the house.


This figure signifieth the Chimnies of the house.

Now you shall further vnderstand that on the South side of your house, you shall plant your Garden and Orchard, as wel for the prospect thereof to al your best rowmes, as also because your house will be a defence against the Northerne coldnesse, whereby your fruits will much better prosper. You shall on the West side of your house, within your inward dairy and kitchin court, fence in a large base court, in the midst whereof would be a faire

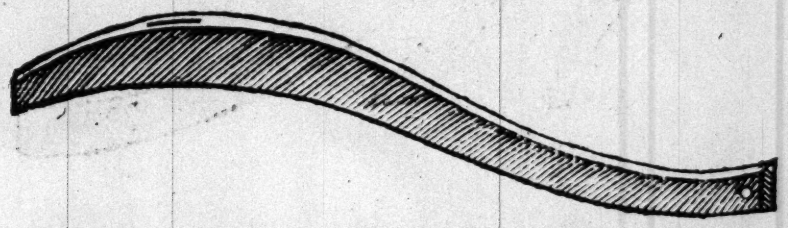
large Pond, well ston'd and grauelled in the bottome, in which your Cattell may drinke, and horses when necessitie shall vrge be washt: for I doe by no meanes alow washing of horses after instant labour. Nere to this Pond you shall build your Doue-coate, for Pigions delight much in the water: and you shall by no meanes make your Doue-house too high, for Pigions cannot endure a high mount, but you shall build it moderately, cleane, neate, and close, with water pentisses to keepe away vermine. On the North side of your base-court you shall build your Stables, Ore-house, Cow-house, and Swine-coates, the doores and windowes opening all to the South. On the South side of the base-court, you shall builde your Hay-barnes, Corne-barnes, pullen-houses for Hennes, Capons, Duckes, and Geese, your french Kilne, and Malting flowres, with such like necessaries: and ouer crosse betwixt both these sides, you shall build your bound houels, to cary your Beans, of good and sufficient timber, vnder which you shall place when they are out of vse your Cartes, Waynes, Tumbrels, Ploughs, Harrowes, and such like, together with Plough timber, and arletrees: all which would very carefully be kept from wet, which of all things doth soonest rot and consume them. And thus much of the Husbandmans house, and the necessaries there to belonging.

Chap. III.

Of the seuerall parts and members of an ordinarie Plough, and of the ioyning of them together.

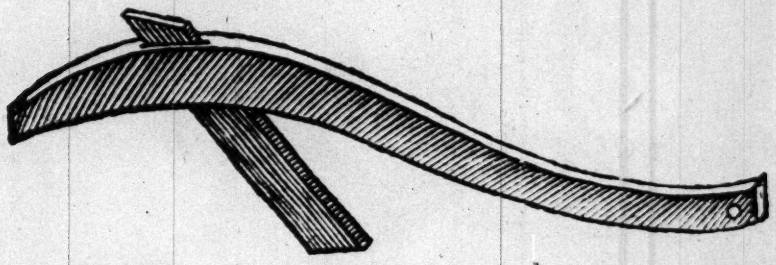
IF a workeman of any trade, or mistery, cannot giue directions how, and in what manner, the toles where with he worketh should be made or fashioned, doubtlesse hee shall neuer worke well with them, nor know when they are in temper and when out. And so it fareth with the Husbandman, for if hee know

know not how his Plough should be made, nor the seuerall members of which it consisteth, with the vertue and vse of euery member; it is impossible that euer hee should make a good furrow, or turne ouer his ground in Husbandly manner: Therefore that euery Husbandman may know how a well shaped Plough is made, he shall vnderstand that the first member thereof, as being the strongest and most principallest peece of timber belonging to the same, is called the Plough-beame, being a large long peece of timber much bending, according to the forme of this figure.

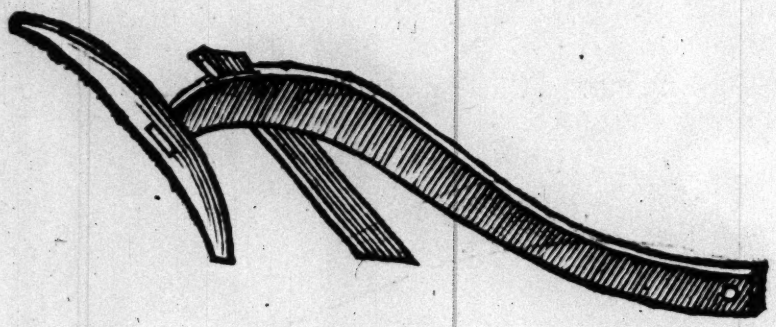


This beame hath no certaine length nor thickneſſe, but is proportioned according to the ground, for if it be for a clay ground the length is almost seauen foote, if for any other mirt or lighter earth, then fiue or sixe foote is long inough.

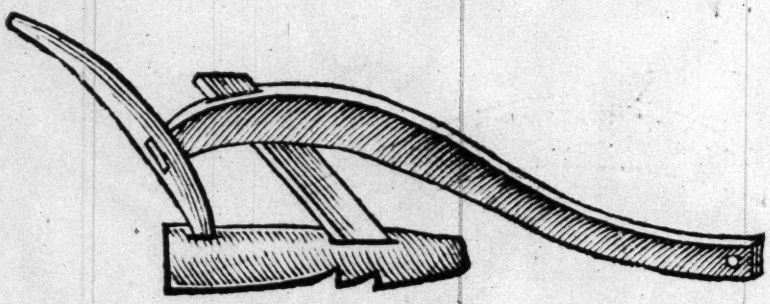
The second member or part of the Plough, is called the sheath, and is a peece of woode of two foote and a halfe in length, and of eight inches in breadth, and two inches in thickneſſe: it is driuen extreamly hard into the Plough-beame, slopewise, so that ioyned they present this figure.



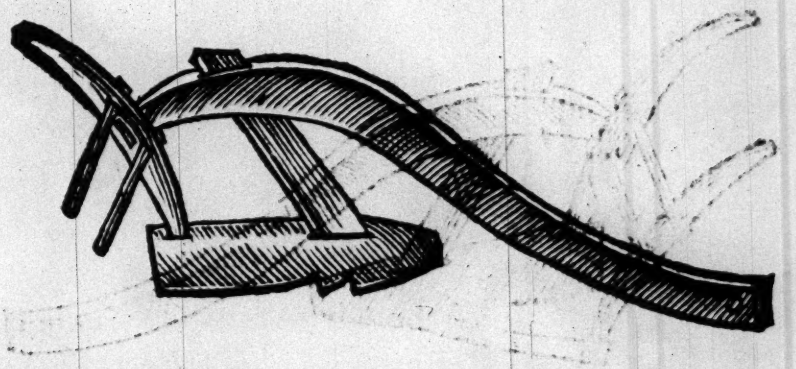
The third part is called the Ploughes principall hale, and doth belong to the left hand being a long bent peece of woode, some what strong in the midst, and so slender at the vpper end that a man may easily gripe it, which being fixed with the rest presenteth this figure.



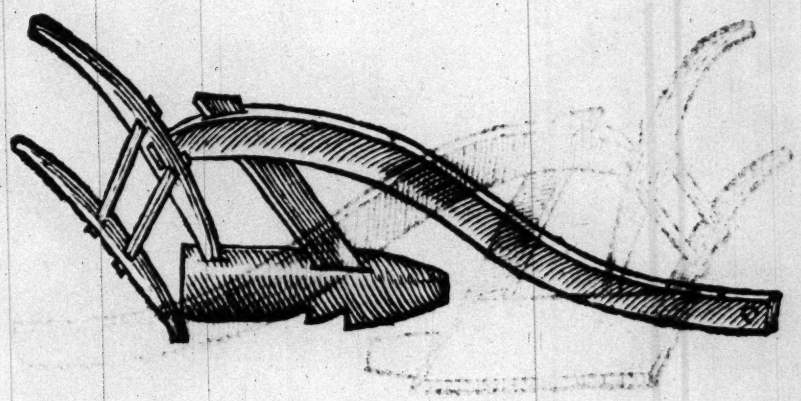
The fourth part is the Plough head, which must be fixed with the sheath & the head all at one instant in two seuerall mortisse holes: it is a flat peece of timber, almost three foote in length if it be for clay ground, otherwise shorter, of breadth seauen inches, and of thicknesse two inches and a halfe, which being ioyned to the rest presenteth this figure.



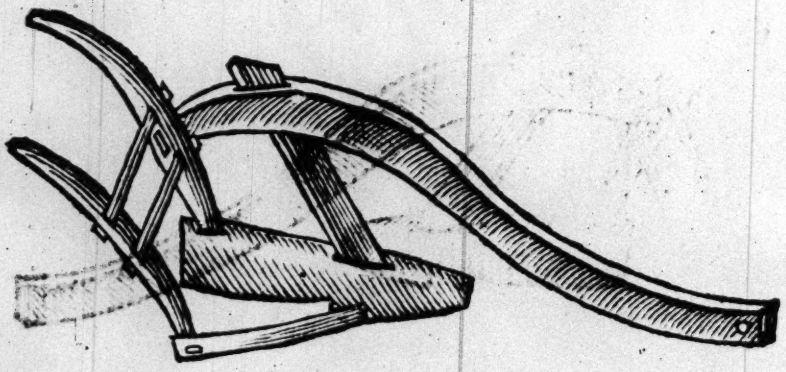
The fift part is the Plough ſpindels, which are two ſmall round peeces of wood, which completh together the hales, as in this figure.



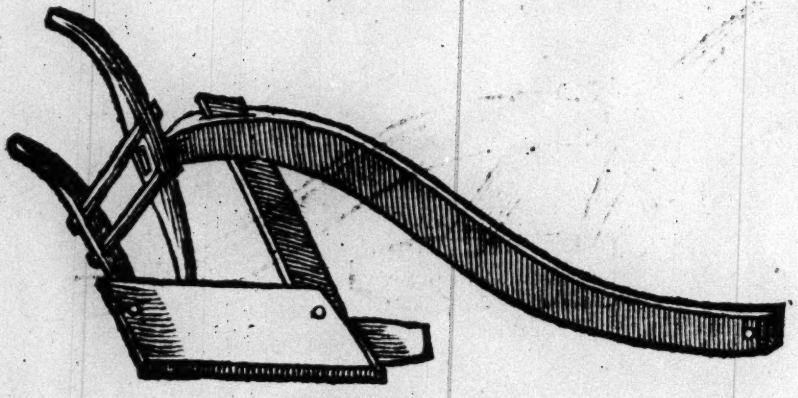
The firt part is the right hand hale, through which the other end of the ſpindels runne, and is much ſlenderer then the left hand hale, for it is put to no force, but is onely a ſtay and aide to the Plough howlder when hee cometh to heauy, ſtiffe, and ſtrong worke, and being ioyned with the reſt preſenteth this figure.



The seauenth part is the Plough-rest, which is a small peece of wode, which is fixt at one end in the further nicke of the Plough head, and the other end to the Ploughs right-hand hale, as you may see by this figure.



The eight part is called the shelboard, and is a broad board of more then an inche thicknesse, which couereth all the right side of the Plough, and is fastned with two strong pinnes of wode through the sheath, and the right-hand hale, according to this figure.

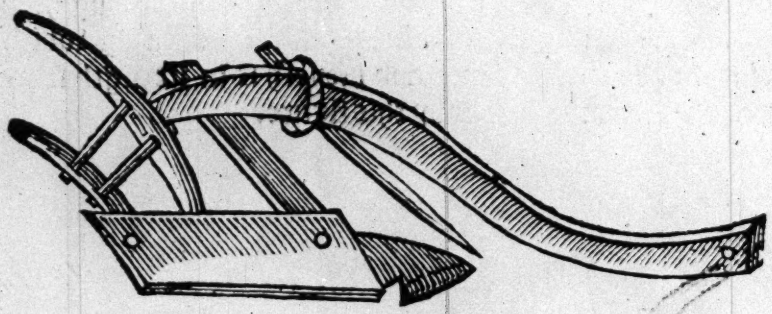


The ninth part is the coulture, which is a long peece of Iron, made ſharpe at the neather end, and alſo ſharpe on one ſide and being for a ſtiffe clay it muſt be ſtraight without bending, which palleth by a mortiſſe-hole through the beame, and to this coulture belongeth an Iron ring, which windeth about the beame and keepeth it in ſtrength from breaking as may appeare by this figure.

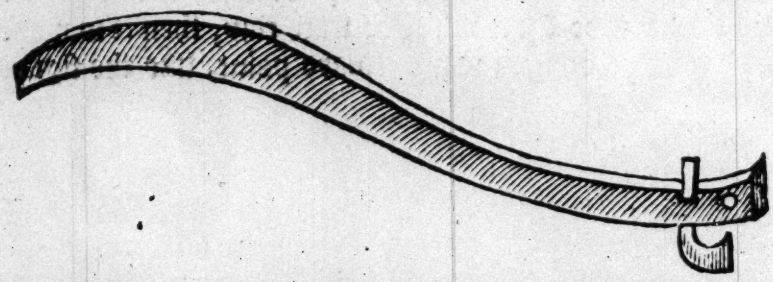


The tenth part of a compleate Plough, is the ſhare; which is fixed to the Plough head, and is that which cutteth and turneth vp the earth: if it be for a mirt earth then it is made without a wing, or with a very ſmall one, but if it be for a deepe, or ſtiffe clay, then it is made with a large wing, or an outward point, like the figure following.

The



The eleauenth part of a perfect Plough is called the Plough fote, and is through a mortise hole fastned at the farre end of all the beame with a wedge or two, so as the Husbandman may at his discretion set it higher or lower, at his pleasure: the vse of it is to giue the Plough earth, or put it from the earth, as you please, for the more you driue it downeward, the more it raiseth the beame from the ground, and maketh the Irons forsake the earth, and the more you driue it vpward the more it letteth downe the beame, and so maketh the Irons bite the lower; the figure whereof is this.



Thus haue you all the parts and members of a Plough, and how they be knit and ioyned together, wherein I would wish you to obserue to make your Plough-wright

euer

euer rather giue your Plough land then put her from the land, that is, rather leaning towards the earth and biting ſore, then euer ſlipping out of the ground: for if it haue two much earth the Husbandman may help it in the houlding, but if it haue too little, then of neceſſitie it muſt make foule worke: but for as much as the error and amends lye both in the office of the Plough-wright, I will not trouble the Husbandman with the reformation thereof.

Now you ſhall vnderſtand that there is one other thing belonging to the Plough, which albe it be no member thereof, yet is it ſo neceſſary that the Husbandman which liueth in durty and ſtiffe clayes can neuer goe to Plough without it, and it is called the Aker-ſtaffe, being a pretty bigge cudgell, of about a yarde in length, with an Iron ſpud at the end, according to this figure:



This Akerſtaffe the Husbandman is euer to carry within his Plough, and when at any time the Irons, ſhelboard, or Plough, are choaked with durt, clay, or filth, which will cling about the ould ſtubble; then with this Akerſtaffe you ſhall put the ſame off (your Plough ſtill going) and ſo keepe her cleane and ſmoth that your worke may lye the handſomer; and this you muſt euer doe with your right hand: for the Plough choaketh euer on the ſhelboard ſide, and betweene the Irons. And thus much touching the perfect Plough, and the members thereof.

Chap. IIII.

How the Husbandman shall temper his Plough, and make her fit for his worke.

A Plough is to a Husbandman like an Instrument in the hand of a Musition, which if it be out of tune can neuer make good Musicke, and so if the Plough, being out of order, if the Husbandman haue not the cunning to temper it and set it in the right way, it is impossible that euer his labour should come to good end.

It is very necessary then that euery good Husbandman know that a Plough being perfectly well made, the good order or disorder thereof consisteth in the placing of the Plough-Irons and the Plough-sote. Know then, that for the placing of the Irons, the share would be set to looke a little into the ground: and because you shall not bruise, or turne, the point thereof, you shall knocke it fast vpon the head, either with a crooked Rams-horne, or else with some piece of soft Ash woode: and you shall obserue that it stand plaine, flat, and leuell, without wrying or turning either vpward or downeward: for if it runne not euen vpon the earth it will neuer make a good furrow, onely as before I said, the point must looke a little downeward.

Now, for the coulture, you must place it slopewise through the beame, so as the point of it and the point of the share may as it were touch the ground at one instant, yet if the coulture point be a little thought the longer it shall not be amisse: yet for a more certaine direction and to try whether your Irons stand true I or no, you shall take a string, and measure from the mortisse hole through which the coulture passeth, to the point of the coulture, and so keeping your vpper hand constant lay the same length to

the

the of point your share, and if one measure serue them both right, there being no difference betweene them, then the Irons stand true for their length, otherwise they stand false.

Now your coulture albe it stand true for the length, yet it may stand either too much to the land, or too much from the land, either of which is a great errour, and will keepe the Plough from going true: your coulture therefore shall haue certaine wedges of ould dry Ash woode, that is to say, one before the coulture on the vpper side the beame, and another on the land side, or left side, the coulture on the vpper side the beame also; then you shall haue another wedge behinde the coulture vndereath the beame, and one on the furrow side, or right side, the beame vnderneath also. Now, if your coulture haue too much land, then you shall driue in your vpper side wedge and ease the contrary: if it haue too little land, then you shall contrarily driue in your right side vnder wedge and ease the other: If your coulture stand too forward, then you shall driue in your vpper wedge which standeth before the coulture; and if it stand too backward and too neere your share, then you shall driue in your vnder wedge which standeth behinde the coulture: if your coulture standeth awry any way, then are either your side wedges too small, or else not euen and plaine cut, which faults you must amend, and then all will be perfect. Now, when your Irons are iust and truely placed, then you shall driue in euery wedge hard and firme, that no shaking or other straine may loosen them: as for the Plough foote it also must haue a wedge or two, which when your Plough goeth right and to your contentment (for the foote will keepe it from sinking or rising) then you shall also driue them in hard, that the foote may not stirre from the true place where you did set it. And that these things when a man commeth into the field may not be to seeke, it is the office of euery good Husbandman neuer to goe forth with his Plough but to haue his Hatchet in a socket, fixt to his Plough beame, and a good

peece of hard wedge woode, in case any of your wedges should shake out and be lost.

Of holding the Plough.

When your Plough is thus ordered and tempered in good manner, and made fit for her worke, it then resteth that you know the skill and aduantages in holding thereof, which indeed are rules of much diuersitie, for if it be a stiffe, blacke clay which you Plow, then can you not Plow too deepe, nor make your furrowes too bigge: if it be a rich hasell ground, and not much binding, then reasonable furrowes, laid close, are the best: but if it be any binding, stony, or sandy ground, then you cannot make your furrowes too small. As touching the gouerning of your Plough, if you see shee taketh too much land, then you shall with your left hand a little to the left side and raise your Plough rest somewhat from the ground: if shee taketh too little earth, then you shall raise vp your left hand, and carry your Plough as in a direct line: If your Plough-Irons forbeare and will not bite on the earth at all, then it is a signe that you hang too heauy on the Plough hales, raising the head of the Plough from the ground, which errour you must amend, and of the two rather raise it vp behind then before, but to doe neither is best, for the Plough hale is a thing for the hand to gouerne, and not to make a leaning stocke of: And thus much touching the tempring of the Plough and making her fit for worke.

Chap. V.

The manner of Plowing the rich, stiffe, blacke Clay, his Earings, Plough, and other Instruments.



If all soyles in this our kingdome there is none so rich and fruitfull, if it be well handled and husbanded, as is that which we call the stiffe, blacke, Clay, and indeed is more blacker to looke on then any other soyle, yet some times it will turne vp very

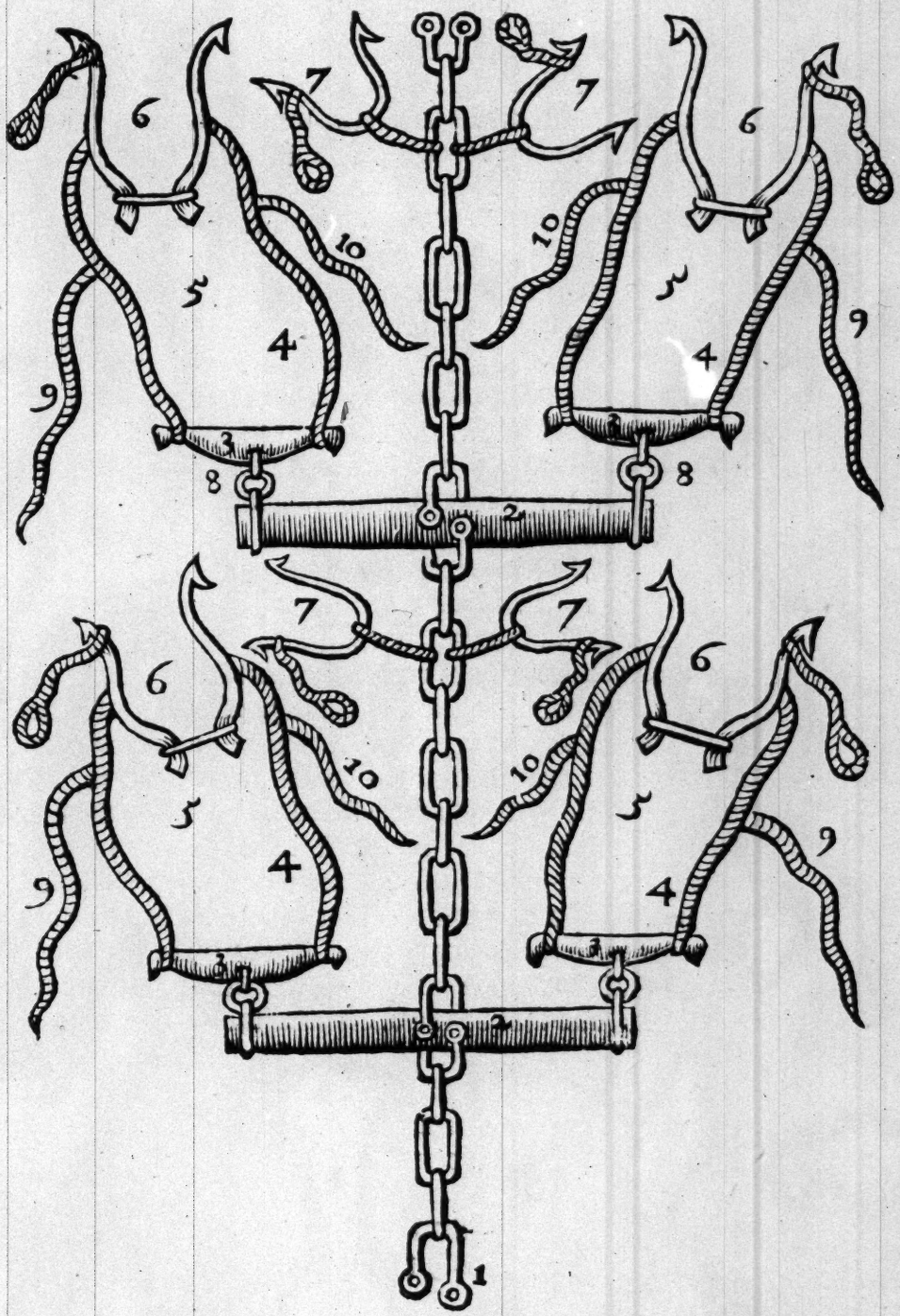
very blewish, with many white vaines in it, which is a very speciall note to know his fruitfulnesse; for that blewish earth mixt with white is nothing else but very rich Marle, an earth that in Cheshire, Lankashire, and many other countries, serueth to Manure and make fat their barrainest land in such sort that it will beare Corne seauen yeeres together. This blacke clay as it is the best soyle, well Husbanded, so it is of all soyles the worst if it be ill Husbanded: for if it lose but one ardor, or seasonable Plowing, it will not be recouered in foure yeeres after, but will naturally of it selfe put forth wilde Oates, Thistels, and all manner of offensiue weedes, as Cockle, Darnell, and such like: his labour is strong, heauy, and sore, vnto the cattell that tilleth it, but to the Husbandman is more easie then any other soyle, for this asketh but foure times Plowing ouer at the most, where diuers other soyles aske fiue times, and sixe times, as shalbe shewed hereafter. But to come to the Plowing of this soyle, I hold it meete to beginne with the beginning of the yeere, which with Husbandmen is at Plow-day, being euer the first Munday after the Twelft-day, at which time you shall goe forth with your draught, & begin to plow your Pease-earth, that is, the earth where you meane to sow your Pease, or Beanes: for I must giue you to vnderstand, that these Clayes are euer more naturall for Beanes then Pease, not but that they will beare both alike, only the Husbandman imployeth them more for Beanes, because pease & fitches wil grow vpon euery soyle, but Beanes wil grow no where but on the clayes onely. This Pease-earth is euer where barley grew the yeere before, & hath the stubble yet remayning thereon. You shal plow this Pease-earth euer vpward, that is, you shall beginne on the ridge of the land, & turne all your furrowes vp, one against another, except your lands lye too high (which seldome can be seene) and then you shall begin at the furrow, & cast downe your land.

Now, when you haue plowed all your Pease-ground, you shall let it so lye, till it haue receiued diuers Frosts,

some Raine, and then a fayre season, which betwixt plowday and Saint Valentines day you shalbe sure to inioy: and this is called, The letting of Land lye to baite: for without this rest, and these seasons, it is impossible to make these Clayes harrow, or yelde any good mould at all. After your Land hath receiued his kindely baite, then you shall cast in your seede, of Beanes, or Pease: but in my conceit, an equall mixture of them is the best seede of all, for if the one faile, the other will be sure to hit: and when your land is sowne you shall harrow it with a harrow that hath woodden teeth.

The next Ardor after this, is the sowing of your Barley in your fallow field: the nert is the fallowing of your ground for Barley the nert yeere: the next Ardor is the Summer-stirring of that which you fallowed: the nert is the foyling of that which you Summer-stirde: and the last is the Winter rigging of that which you soil'd: of all which Ardors, and the manner of Plowing them, with their seasons, I haue written sufficiently in the first Chapter of the nert part; where I speake of simple earths vncompounded.

Now whereas I told you before that these clayes were heauy worke for your Cattell, it is necessary that I shew you how to ease them, and which way they may draw to their most aduantage, which onely is by drawing in beare-geares, an inuention the skilfull Husbandman hath found out, wherein foure horses shall draw as much as fiue, and fiue as eight, being geard in any other contrary fashion. Now because the name onely bettereth not your knowledge, you shall heare behould the figure and manner thereof.


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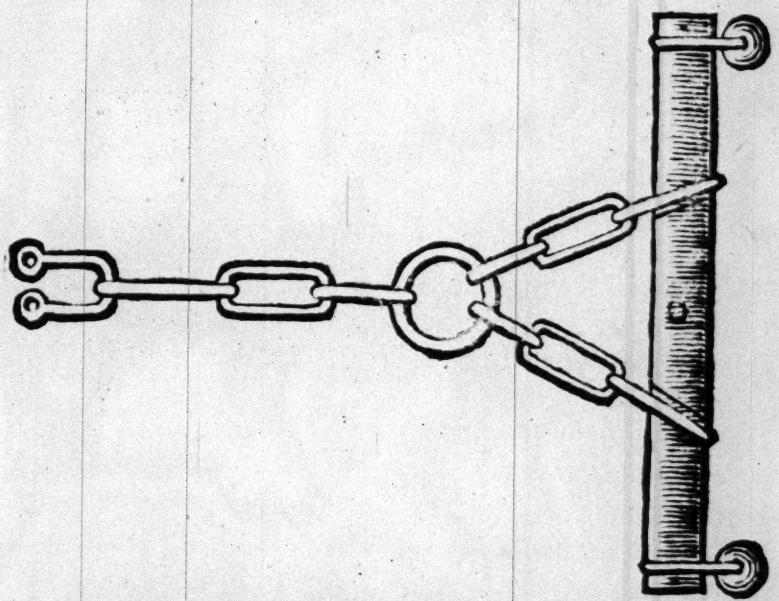
Now you shall vnderstand the vse of this Figure by the figures therein contayned, that is to say, the figure (1) presenteth the plough-cleuille, which being ioyned to the plough-beame, extendeth, with a chaine, vnto the first Toastrée: and touching this Cleuille, you shall vnderstand, that it must be made with three nickes in the midst thereof, that if the Plough haue too much land giuen it in the making, that is, if it turne vp too much land, then the chaine shall be put in the outwardmost nicke to the land side, that is, the nicke towards your right hand: but if it take too little land, then it shall be put in the nicke next the furrow, that is, towards the right hand: but if it goe euen and well, then you shall keepe it in the middle nicke, which is the iust guide of true proportion. And thus this Cleuille is a helpe for the euill making or going of a plough.

(2) Is the hind-most Toastrée, that is, a broad piece of Ash woode, three inches broad, which going ouerthe chaine, hath the Swingletrées fastned vnto it, by which the horses draw. Now you shall vnderstand that in this Toastrée is great helpe and aduantage: for if the two horses which draw one against the other, be not of equall strength, but that the one doth ouer-draw the other, then you shall cause that end of the Toastrée by which the weaker horse drawes, to be longer from the chaine then the other, by at least halfe a foote, and that shall giue the weaker horse such an aduantage, that his strength shall counterpoyse with the stronger horse. Now there be some especiall Husbandmen that finding this disaduantage in the Toastrée, and that by the vncertaine shortening, and lengthening of the Toastrée, they haue sometimes more disaduantaged the strong horse, then giuen helpe to the weake, therefore they haue inuented another Toastrée, with a double chaine, and a round ring, which is of that excellent perfection in draught, that if a Foale draw against an olde horse, yet the Foale shall draw no more then the abilitie of his owne strength, each taking his worke by himselfe, as

if

if they drew by single chaines. Now because this Toastrée is such a notable Implement both in Plough, Cart, or Waine, and so worthy to be imitated of all good husbands, I thinke it not amisse to shew you the figure thereof.

The Toastree with double chaines.



(3) The Swingletrées, being pieces of Ash wood cut in proportion afore-shewed, to which the Treates, by which the horses draw, are fastned with strong lopes.

(4) The Treates by which the horses draw, being strong cords made of the best Hempe.

(5) The place betweene the Treats, where the horses must stand.

(6) The Hames, which girt the Collers about, to which the other end of the Treats are fastned, being compassed pieces of wood, eyther cleane Ash, or cleane Oake.

(7) The round Withes of wood, or broad thongs of leather, to put about the horses necke, to beare the mane chayne from the ground, that it trouble not the horses in their going.

(8) The Single-linckes of Iron, which ioyne the Swingle-trees vnto the Toastrees.

(9) The Belly-bands, which passe vnder the belly of the horse, and are made fast to both sides of the Treates, keeping them downe, that when the horse drawes, his coller may not choake him: being made of good small line or coard.

(10) The Backe-bands, which going ouer the horses backe, and being made fast to both sides of the Treates, doe hold them, so as when the horses turne, the Treates doe not fall vnder their feete.

Thus I haue giuen you the perfect portraiture of a well poakt Plough, together with his Implements, and the vse of them, being the best which hath yet beene found out by any of our skilfullest English Husbandmen, whose practise hath beene vpon these deepe, stiffe, blacke clayes.

How many beasts in a plough.

Now you shall vnderstand, that for the number of Cattell to be vsed in these ploughes, that in fallowing your land, and plowing your Pease-earth, eight good Cattell are the best number, as being the strongest, and within the compasse of gouernment, whereas more were but troublesome, and in all your other Ardors, sixe good beasts are sufficient, yet if it be so, that eyther want of ability, or other necessity vrge, you shall know that fiue beasts will suffice eyther to fallow, or to plow Pease-earth, and foure beasts for euery other Ardor or earing: and lesse then this number is most insufficient, as appeares by daily experience, when poore men kill their Cattell onely by putting them to ouer-much labour. And thus much touching the plowing of the blacke clay.

CHAP.

Chap. VI.

The manner of plowing the white or gray Clay, his Earings, Plough, and Instruments.

NOW as touching the white or gray clay, you shall vnderstand that it is of diuers and sundry natures, altering according to his tempers of wet or dryneſſe: the wet being more tough, and the dry more brittle: his mixture and other characters I haue shewed in a former Chapter, wherefore for his manner of plowing (obseruing my first methode, which is to beginne with the beginning of the yeare, I meane at Christmas) it is thus:

Of sowing of Peaſe and Beanes.

If you finde that any of this white or gray clay, lying wet, haue leſſe mixture of stone or chaulke in it, and so consequently be more tough, as it doth many times fall out, and that vpon such land, that yeare, you are to sow your Peaſe and Beanes: for as in the former blacke clay, so in this gray clay you shall begin with your Peaſe-earth euer: then immediately after Plow-day, you shall plow vp such ground as you finde so tough, in the selfe-same manner as you did plow the blacke clay, and so let it lye to baite till the froſt haue seaſoned it, and then sow it accordingly. But if you haue no such tough land, but that it holdes it owne proper nature, being so mixt with small stones and chaulke, that it will breake in reaſonable manner, then you shall stay till the latter end of January, at what time, if the weather be seaſonable, and inclining to dryneſſe, you shall beginne to plow your Peaſe-earth, in this manner: Firſt, you shall cauſe your ſeedes-man to sow the land with single caſts, as was shewed vpon the blacke clay, with this caution, that the greater your ſeede is, (that is, the more Beanes you sow) the greater muſt be your quantitie: and being sowne, you shall bring your plough,

and beginning at the furrow of the land, you shall plow euery furrow downeward vpon the Pease and Beanes: which is called sowing of Pease vnder furrow: and in this manner you shall sow all your Pease and Beanes, which is cleane contrary to your blacke clay. Besides, whereas vpon the stiffe clay it is conuenient to take as large furrowes as you please, vpon this kinde of gray clay you shall take as small furrowes as is possible. Now the reason for this manner of plowing your Pease-earth, is, because it is a light kinde of breaking earth, so that should it be sowne according to the stiffe blacke clay, it would neuer couer your Pease, but leaue them bare, both to be destroyed by the Fowles of the ayre, and the bitternesse of the weather. As sone as your Pease and Beanes are risen a fingers length aboue the earth, then if you finde that any of your lands doe lye very rough, and that the clods be great, it shall not be amisse, to take a payre of wodden Harrowes, and harrow ouer all your rough lands, the benefit whereof is this, that it will both breake the hard clots, and so giue those Pease leaue to sprout through the earth, which before lay bound in and drowned, and also lay your lands smoth and cleane, that the Mowers when they come to mowe your Pease and Beanes, shall haue better worke, and mowe them with more ease, and much better to the owners profit. For you must vnderstand that where you sow Beanes, there it is euer more profit to mowe them with Sythes, then to reape them with Hookes, and much sooner, and with lesse charge performed. The limitation of time for this Ardor of earing, is from the latter end of January vntill the beginning of March, not forgetting this rule, that to sow your Pease and Beanes in a shower, so it be no beating raine is most profitable: because they, as Wheat, take delight in a fresh and a moyst mould.

Of sowing of Barley.

After the beginning of March, you shall beginne to sow your Barley vpon that ground which the yere before did lye fallow, and is commonly called your tilth, or fallow field: and if any part of it consist of stiffe and tough ground, then

then you shall, vpon such ground, sow your Barley vnder furrow, in such manner and fashion as I described vnto you for the sowing of your stiffe blacke clay: but if it be (as for the most part these gray and white clayes are) of a much lighter, and as it were, fussie temper, then you shall first plow your land vpward, cleane and well, without baukes or stiches: and hauing so plowed it, you shall then sow it with Barley, that is to say, with double casts, I meane, bestowing twise so many casts of Barley, as you would doe if you were to sow it with Pease. And as sone as you haue sowne your Barley, you shall take a payre of wodden Harrowes, and harrow it as small as is possible: and this is called sowing aboue furrow.

Of sowing Oates.

Now if you haue any land, which eyther through the badnesse of the soyle, or for want of manure, is more barrayne, and hard to bring forth then generally the rest of your land is, then you shall not bestow Barley thereupon, but sow it with Oates, in such manner and fashion as is appointed for the sowing of Pease, that is to say, if it be stiffe ground you shall sow it aboue furrow, if it be light ground, then you shall sow it vnder furrow, knowing this for a rule, that the barraynest ground will euer beare indifferent Oates, but if the ground haue any small hart, then it will beare Oates in great abundance: neither néede you to be very precise for the oft plowing of your ground before you sow your Oates, because Oates will grow very well if they be sowne vpon reasonable ground, at the first plowing: whence it comes to passe that many Husbandmen doe oft sow their Oates where they should sow their Pease, and in the same manner as they doe sow their Pease, and it is held for a rule of good husbandry also: because if the ground be held any thing casuall for Pease, it is better to haue good Oates then naughty Pease: besides, your Oates are both a necessary graine in the house, as for Oate-meale, for the pot, for Puddings, and such like, and also for the stable, for Prouender, and the féeding of all manner of Poultry. The time for sowing of your Barley and Oates, is

from the first of March till the first of Aprill, obseruing euer to sow your Oates first, and your Barley after, for it being onely a Summer graine, would participate as little as may be with any part of the Winter.

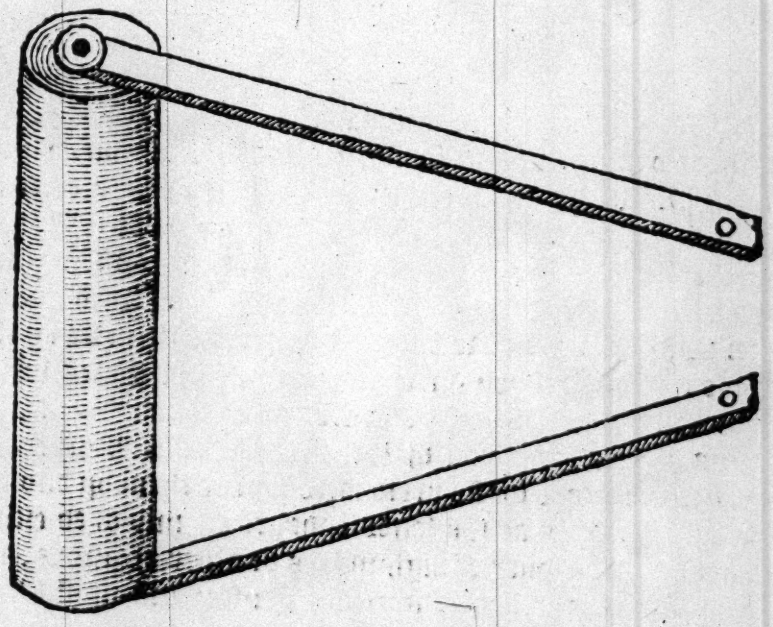
Of Fallowing. About the middest of Aprill you shall beginne to fallow that part of your ground, which you entend shall take rest that yeere, and so become your fallow or tilth-field. And in fallowing this gray or white clay, you shall obserue all those rules and ceremonies, which are formerly described for the fallowing of the stiffe blacke clay, knowing that there is in this worke no difference betweene the blacke clay, and the gray clay, but both to be plowed after one manner, that is to say, to haue all the furrowes cast downeward, and the ridges of the lands laid largely open, and of a good depth, onely the furrowes which you turne vpon this gray clay must be much smaller and lesse then those which you turne vpon your stiffe blacke clay, because this earth is more naturally inclined to binde and cleaue together then that of the blacke clay. The time for fallowing of this ground, is from the middest of Aprill vntill the middest of May: at what time you shall perceiue your Barley to appeare aboue the ground, so that then you

Of sleighting Barley. shall beginne to sleight and smoth it: but not with backe Harrowes, as was described for the blacke clay, because this gray clay being not so fat and rich, but more inclined to falnesse and hardnesse, therefore it will not sunder and breake so easily as the other: wherefore when you will smoth or sleight this ground, you shall take a round piece of wood, being in compasse about at least thirty inches, and in length fiue foote, hauing at each end a strong pinne of Iron, to which making fast two small poales, by which the horse shall draw, yet in such sort that the round piece of wood may roule and turne about as the horse drawes it: and with this you shall roule ouer all your Barley, and by the waight of the round piece of wood bruise and breake all the hard clots asunder. This is called amongst Husbandmen a Rouler, and is for this purpose of sleighting and smoothing

smoothing of grounds of great vse and profit. Now you shall vnderstand that you must not at any time sleight or smoth your Corne, but after a shower of Raine, for if the mould be not a little moistned the rouler will not haue power to breake it.

Now for as much as this rouler is of so good vse and yet not generally vsed in this kingdome, I thinke it not amisse to shew you the figure thereof.

The great Rouler.



As soone as you haue roulled ouer your Barley, & laid it so smoth as you can with your rouler, if then you perceiue any hard clots, such as the rouler cannot breake, then you shal send forth your seruants with long clotting beetels, made broad and flat, and with them you shall breake asunder all those hard clots, and so lay your Barley as smoth and cleane as is possible: the profit whereof you shall both finde in the multiplying of your Corne and also in the saving

saning of your sithes from breaking, at such time as you shall come to mowe your Corne, and gather in your Haruest.

Your Barley being thus laide smoth, you shall then follow your other necessary businesses, as preparing of your fewell, and other nedements for houshould, vntill the beginning of June, at which time you shall beginne to Summer-stirre your fallow field, which shalbe done in all points after the same manner as you did Summer-stirre your blacke Clay, that is to say, you shall beginne in the ridge of the land, and as when you fallowed your land you turned your furrowes downeward, so now in Summer-stirring, you shall turne your furrowes vpward and close the ridge of you land againe. As sone as this Ardor is finished, or when the vnseasonablenesse of the weather, as either too much wet, or too much dryneste shall hinder you from Plowing, you shall then looke into your Corne fields, that is to say: first into your Wheate and Rye field, and if there you shall finde any store of weedes, as Thistil, Darnell, Tare, Cockle, or such like, you shall with weedehookes, or nippers of woode, cut, or plucke them vp by the rootes; and also if you finde any annoyance of stones, which hinders the growth of your Corne, as generally it happens in this soyle, you shall then cause some Boyes and Girles, or other waste persons, to gather them vp and lay them in heapes at the lands ends, to be imployed either about the mending of high wayes or other occasions, and for this purpose their is a generall custome in most Villages, that euery houshoulder is bound to send out one seruant to be imployed about this businesse: whence it comes to passe, that it is called common worke, as being done at the generall charge of the whole Parish. After you haue weeded your Wheate and Rye, you shall then weede your Barley also, which being finished about the midst of July, you shall then beginne to looke into your medowes and to the preparing of your Hay haruest.

Of Summer-stirring.

Of weeding.

Of stone gathering.

Now at such time as either the vnseasonablenesse of

growth

the weather, or the growth of your graſſe ſhall hinder you from following that buſineſſe of Harueſt, you ſhall then looke into your fallow or tilth field againe, and whereas before at your Summer-ſtirring you Plowed your land vpward, now you ſhall begimne to foile, that is to ſay, you ſhall caſt your land downe againe, and open the ridge: and this Ardor of all other Ardors you muſt by no meanes neglect vpon the gray, white clay, becauſe it being moſt ſubiect vnto wæde, and the hardeſt to bring to a fine mould, this Ardor of all others, doth both conſume the one and makes perfect the other, and the drier ſeaſon you doe foile your land in, the better it is, and the more it doth breake and ſunder the clots in pieces: for as in Summer-ſtirring the greater clots you raiſe vp, and the rougher your land lies the better it is, becauſe it is a token of great ſtore of mould, ſo when you foile, the more you breake the clots in pieces the better ſeaſon will your land take, and the richer it wilbe when the ſæde is ſowne into it: And the ſeaſon for the foiling of this foile is from the midſt of July till the midſt of September. Of foyling.

Now albe I haue omitted the Manuring of this land in his due place, as namely, from the midſt of Aprill, till the end of May, yet you ſhall vnderſtand that of all other things it is not in any wiſe to be neglected by the carefull Huſbandman, both becauſe the ſoyle being not ſo rich as the blacke Clay, will very hardly bring forth his ſæde without Manure, and alſo becauſe it is for the moſt part ſubiect vnto much wet, and ſtones, both which are ſignes of cold and barraineneſſe. Now for thoſe Manures, which are beſt and moſt proper for this foile, you ſhall vnderſtand that all thoſe which I formerlie deſcribed for the blacke Claies, as namely, Ore or Cowes dung, Horſe dung and Sheepes dung, are alſo very good for this foile, and to be vſed in the ſame manner as is ſpecified in the former Chapter: but if you haue not ſuch ſtore of this Manure as will ſerue to compaſſe your whole land, you ſhall then vnderſtand, that the blacke mud, or durt which lies Of Manuring

in the bottome of olde ponds, or else standing lakes, is also a very good manure for this soile, or else straw which is spread in high-wayes, and so rotted by the great concourse or vse of much trauelling, and after in the Spring-time thoueiled vp in great heapes, is a good manure for this earth: but if you finde this soile to be subiect to extraordinary wet and coldnesse, you shall then know that the ashes eyther of wood, coale, or straw, is a very good manure for it. But aboue all other, and then which there is no manure more excellent for cold barraine clayes of this nature, the Pigions dung, or the dung of houshold Pullen, as Capons, Hennes, Chickens, Turkies, and such like, so there be no Gose-dung amongst it, is the best of all other: but not to be vsed in such sort as the other manures, that is to say, to be laid in great heapes vpon the land, or to be spread from the Cart vpon the land, for neyther is there such abundance of such manure to be gotten, nor if there were, it would not be held for good husbandrie to make lauish hauocke of a thing so precious.

The vse of Pigion or Pullen-dung.

You shall then know that for the vse of Pigion or Pullen-dung, it is thus: you shall first with your hand breake it as small as may be, and then put it into the Hopper, in such sort as you put your corne when you sow it: and then loke how you sow your corne, in such sort you shall sow your Pigion or Pullen dung: which done, you shall immediately put your Barley into the same Hopper, and so sow it after the Pigions or Pullen-dung: by which you are to vnderstand that this kinde of manuring is to be vsed onely in Sæde-time, and at no other season. This manure is of the same nature that sheepes manure is, and doth last but onely for one yeere, onely it is much hotter, as being in the greatest extremitie of heate. Now if it happen that you cannot get any of this Pigions or Pullen-dung, because it is scarce, and not in euery mans power, if then you take Lime and sow it vpon your land in such sort as is before said of the Pigions-dung, and then sow your corne after it, you shall finde great profit to come thereon,

especially

especially in colde wet soiles, such as for the most part, these gray white clayes are.

After your land is soild, which worke would be finished by the middest of September, then you shall beginne to sow your Wheate, Rye, and Maslin, which in all things must be done as is before set downe for the blacke clay, the choise of seede, and euery obseruation being all one: for Wheat not taking delight in a very rich ground, doth prosper best vpon this indifferent soile. Whence it comes that in these gray white clayes, you shall for the most part, see more Wheate sowne then any other Graine whatsoeuer. But as touching your Rye and Maslin, that euer desires a rich ground and a fine mould, and therefore you shall make choise of your better earth for that Seede, and also obserue to helpe it with manure, or else shæpes folding, in such manner as is described in the former Chapter, where I spake of the sowing of Wheate, Rye, and Maslin. Of sowing Wheate.

As sone as you haue sowne your Wheate, Rye, and Maslin, you shall then about the latter end of October, beginne to Winter ridge, or set vp your land for the whole yeare: which you shall doe in all points, as you doe vpon the blacke clay, without any change or alteration. And the limitation for this Ardor is, from the latter end of October vntill the beginning of December, wherein your yeares worke is made perfect and compleate. Of winter-ridging.

Now you shall vnderstand, that although I haue in this generall sort passed ouer the Ardors and seuerall Earings of this white or gray clay, any of which are in no wise to be neglected: yet there are sundry other obseruations to be held of the carefull Husbandman, especially in the laying of his land: as thus, if the soile be of good temper, fruitfull, drie, and of a well mixed mould, not being subiect to any naturall spring or casting forth of moisture, but rather through the natiue warmth drying vp all kinde of flures or colde moistures, neyther binding or strangling the Seede, nor yet holding it in such lowsenesse, that it lose Obseruations.

his force of increasing, in this case it is best to lay your lands flat and leuell, without ridges or furrowes, as is done in many parts of Cambridge-shire, some parts of Essex, and some parts of Hartford-shire: but if the clay be fruitfull and of good temper, yet either by the bordering of great hils, the ouer-flow of small brookes, or some other casuall meanes it is subiect to much wet or drowning, in this case you shall lay your lands large and high, with high ridges and deepe furrowes, as generally you see in Lincolne-shire, Nottingham-shire, Huntington-shire, and most of the middle Shires in England. But if the land be barraine, colde, wet, subiect to much binding, and doth bring forth great store of weedes, then you shall lay your land in little sticches, that is to say, not aboue three or foure furrowes at the most together, as is generally seene in Middlesex, Hartford-shire, Kent and Surrey: for by that meanes neither shall the land binde and choake the Corne, nor shall the weede so ouer-runne it, but that the Husbandman may with good ease helpe to strengthen and cleanse it, the many furrowes both giuing him many passages, whereby he may correct those enormities, and also in such sort conuaying away the water and other moistures, that there cannot be made any land more fruitfull.

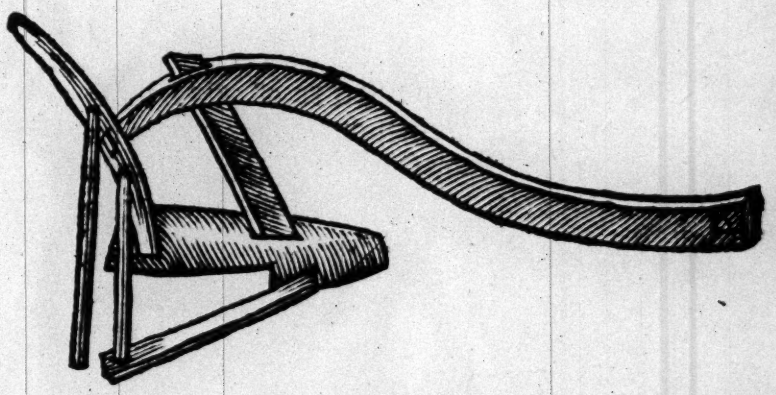
Of the Plough. Now to speake of the Plough which is best and most proper for this gray or white clay, of which we now speake, you shall vnderstand that it differeth exceeding much from that of which we spake concerning the blacke clay: I, and in such sort, that there is but small alliance or affinitie betweene them: as thus for example:

First, it is not so large and great as that for the blacke clay: for the head thereof is not aboue twentie inches in length, and not aboue one inch and a halfe in thickneſſe, the maine beame thereof is not aboue fiue foot long, & the rest is broader by an inch and more then that for the blacke clay: this Plough also hath but one hale, & that is onely the left hand Hale: for the Plough-staffe, or Aker-staffe serueth euer in stead of the right hand Hale, so that the Rough-

staues

staues are fired, the vpper vnto the shelboard, and the neather vnto the Plough-rest, as for your better vnderstanding you may perceiue by this figure.

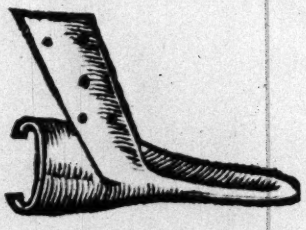
The Plough with one Hale.



Now you shall vnderstand that the especiall care which is to be held in the making of this Plough, is, that it be wide and open in the hinder part, that it may turne and lay the furrowes one vpon another: whereas if it should be any thing straitned in the hinder part, considering that this clay naturally is somewhat brittle of it selfe, and that the furrowes which you plow must of necessitie be very narrow and little, it were not possible so to lay them, but that they would fall downe backe againe, and inforce the Plowman to lose his labour. Also you shall vnderstand that whereas in the former plough, which is for the blacke clay, you may turne the shelboard, that is, when the one end is worne, you may eftsoones turne the other, and make it serue the like season: in this Plough you must neuer turne the shelboard, because the rising wing of the Share will so defend it, that it will euer last as long as the Plough-head, without change or turning.

Now for the Irons belonging vnto this Plough, which is the Share and Coulture, there is more difference in them then in the Plough: for to speake first of the Share, whereas the former Share for the blacke clay, was made broad, plaine, and with a large wing, this Share must be made narrow, sharpe, and small, with no wing at all, hauing from the vpper part thereof, close by the shelboard, a certaine rising wing, or broad piece of Iron, which comming vp and arming that part of the shelboard which turnes ouer the land, defends the wood from the sharpe mould, which hauing the mixture of pible stone in it, would otherwise in lesse then one dayes worke consume the shelboard vnto nothing, forcing the Plow man to much trouble and double cost. The fashion of the Share is presented in this Figure following.

The Share.



This Share is onely made that it may take a small furrow, and so by breaking the earth oftner then any other Share, causeth the land to yeeld a good and plentifull mould, and also keepe it from binding or choaking the seede when it is cast into it.

Now for the Coulture, it differeth from the former Coulture both in breadth and thicknesse, but especially in compasse: for whereas the former Coulture for the blacke clay, was made straight, narrow, and thicke, this must be compassed like an halfe bent bow: it must be broader then three fingers, and thinner then halfe an inche, according to this Figure.

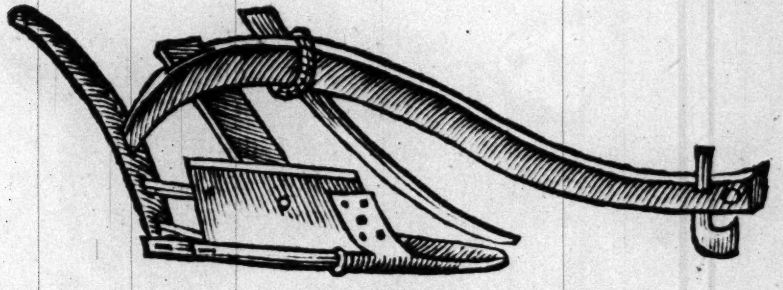
The

The Coulture.



Now when theſe Irons, the Shelboard, and other implements are fired vnto the Plough, you ſhall perceiue that the Plough will carry the proportion of this Figure following.

The Plough for the gray Clay.



Hauing thus ſhewed you the ſubſtance, difference, and contraries of theſe two Ploughs, which belong to theſe two ſeuerall clayes, the blacke and gray, you ſhall vnderſtand that there is no clay ground whatſoeuer, which is without other mixture, but one of theſe Ploughs will ſufficiently ſerue to eare and order it: for all clayes are of one of theſe tempers.

Now for the vſe and manner of handling or holding this Plough, it differeth nothing in particular obſeruation from The vſe and handling.

The

the vse and handling of the Plough formerly described, more then in the largenesse and smalnesse of the furrowes: for as before I said, whereas the blacke clay must be raised with a great furrow, and a broad stitch, this gray clay must be raised with a small furrow, and a narrow stitch: and although this plough haue nothing but a left hand Hale, yet considering the Plough-staffe, vpon which the Plow-man resteth his right hand, it is all one as if he had a right. And indeede, to make your knowledge the more perfect, you shall know that these gray clayes are generally in their owne natures so wet, tough, and slimy, and doe so clogge, cleaue, and choake vp the Plough, that hee which holds it shall haue enough to doe with his right hand onely to clense and keepe the Plough from choaking, insomuch that if there were another Hale, yet the Plow-man should haue no leasure to hold it.

Of the draught or Teame.

Now for the Draught or Teame which should draw this Plough, they ought in all points, as well in strength as tryuing to be the same with those before shewed for the vse of the blacke clay: as namely, either Oxen or Horse, or Horse and Oxen mixt together, according to the custome of the soile wherein the Plow-man liues, or his abilitie in prouision, obseruing euer to keepe his number of beasts for his Plough certaine, that is to say, for fallowing, and Pease-earth, neuer vnder fiue, and for all other Ardors foure at the least. And thus much for the plowing of this gray or white clay.

The

Chap: VII.

The manner of plowing the red-Sand, his Earings, Plough, and Implements.

NExt vnto these Clayes, which are soiles simple and vncompound, as being perfect in their owne natures, without the helpe of other mixtures, I place the Sand soiles, as being of like qualitie, not borrowing any thing but from their owne natures, nor breeding any defects more then their owne naturall imperfections: and of Sands, sith the red Sand is the best and most fruitfull, therefore it is fit that it take prioritie of place, and be here first spoken of.

You shall then vnderstand that this red Sand, albeit it is the best of Sands, yet it is the worst of many soiles, as being of it selfe of such a hot and drie nature, that it scorcheth the seede, and dryeth vp that nutriment and fatnesse which should occasion increase: whereby it comes to passe, that the Barley which growes vpon this red Sand is euer more yealow, leane and withered, then that which growes vpon the clayes or other mixt earths. This Sand especially taketh delight in Rye, because it is a Graine which loues warmth aboue all other, and yet notwithstanding, if it be well ordered, manured and plowed, it will bring forth good store of Barley, albeit the Barley be not so good as Clay-Barley, either for the colour, or for the yeeld, whether it be in meale or in Malt.

Now for the manner of Earing or plowing this redde Sand, it differeth much from both the former soyles, insomuch that for your better vnderstanding, I must in many places alter my former methode, yet so little as may be, because I am loath to alter or clogge the memory of the Reader: wherefore to pursue my purpose. As soone as Christmas is ended, that is to say, about the midest of January,

January, you shall goe with your Plough into that field where the Harueſt before did growe your Rye, and there you shall in your plowing caſt your lands downe-ward, and open the ridges well, for this yeare it muſt be your fallow field: for as in the former ſoiles, we did diuide the fields either into three parts, that is, one for Barley and Wheate, another for Peaſe, and the third fallow, which is the beſt diuiſion: or into foure parts, that is, one for Wheate and Rye, another for Barley, a third for Peaſe, and a fourth fallow, which is the worſt diuiſion and moſt toileſome, ſo in this red Sand ſoile, we muſt euer diuide it into three parts, that is, one for Barley, another for Rye, and a third fallow. For this Sand-ſoile being hot, drie, and light, will neither bring forth good Beanes nor good Peaſe, and therefore that Ardor is in this place but onely to be ſpoke of by way of diſcourſe in vrgent neceſſitie.

Wherefore (as before I ſaid) about the middeſt of January you ſhall beginne to lay fallow that field, where formerly did growe your Rye, the manner of plowing whereof differeth nothing from the manner of plowing the clayes before written of, onely that the diſcretion of the Plowman muſt thus farre forth gouerne him, that in as much as this ſoile is lighter, dryer, and of a more looſe temper, by ſo much the more he muſt be carefull to make his furrowes leſſe, and to lay them the cloſer together: & alſo in as much as this ſoile, through his naturall warmth and temperate moiſture, is exceeding apt to bring forth much weede, eſpecially Brakes, Ling, Brambles, and ſuch like, therefore the Plow-man ſhall be very carefull to plow all his furrowes very cleane, without baukes or other impediments by which may be ingendred any of theſe inconueniences.

Of Spring-foyling.

After you haue thus broke vp and fallowed your fallow or tilth-field, the limitation of which time is from the middeſt of January vntill the middeſt of Februarie, you ſhall then at the middeſt of Februarie, when the clay-men begin to ſow their Beanes and Peaſe, goe with your plough into your other fallow-field, which all the yeare before hath laine

fallow

fallow and already receiued at your hands at leaſt foure ſeuerall Ardors; as Fallowing, Summer-ſtirring, Foyling, and Winter-rigging; and there you ſhall plow all that field ouer the fift time, which is called the Spring-foyling: and in this Ardor you ſhall plow all your lands vpward, in ſuch ſort as when you Winter-ridge it, by which meanes you ſhall plow vp all thoſe weedes which haue ſprung forth in the Winter ſeaſon. For you muſt vnderſtand that in theſe light, hot, ſandy ſoiles, there is a continuall ſpring (though not of good fruits) yet of weeds, quicks, and other inconueniences: for it is a rule amongſt Huſbandmen, that warme ſoiles are neuer idle, that is, they are euer bringing forth ſomething.

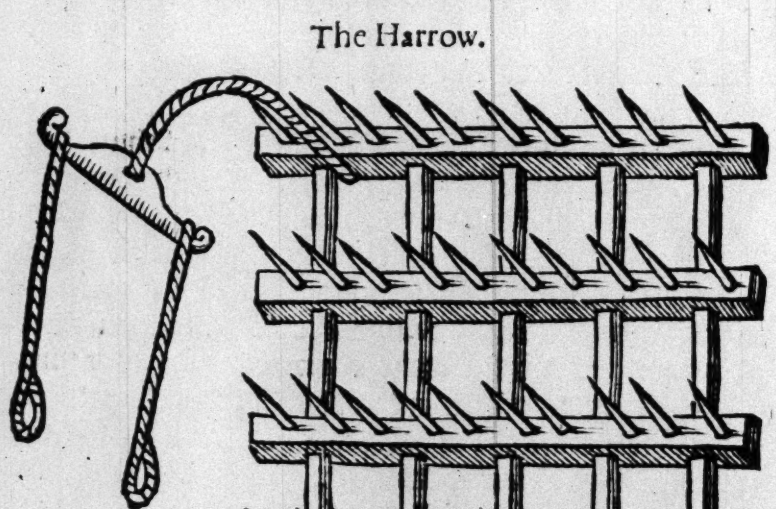
Now the limitation for this Ardor is from the middeſt of Februarie vntill the middeſt of March, at which time you ſhall, by comparing former experience with your preſent iudgement, take into your conſideration the ſtate, goodneſſe, and powerfulneſſe of your land, I meane eſpecially of this fallow-field, which hath laine fallow the yeare before, and hath now receiued fiue Ardors: and if you finde any part of it, either for want of good ordering in former times, or for want of manure in the preſent yeare, to be growne ſo leane and out of hart, that you feare it hath not ſtrength enough to beare Barley, you ſhall then at this time, being the middeſt of March, ſow ſuch land with Rye, which of Huſbandmen is called the ſowing of March-Rye: and this Rye is to be ſowne and harrowed in ſuch ſort as you did ſow it vpon the clay ſoiles, that is to ſay, aboue furrow, and not vnder furrow, except the land be very full of quickes, that is, of Brakes, Ling, Brambles, Dockes, or ſuch like, and then you ſhall firſt with a paire of Iron harrowes, that is, with harrowes that haue Iron teeth, firſt of all harrow the land ouer, and by that meanes teare vp by the rootes all thoſe quickes, and ſo bring them from the land: which done, you ſhall ſow the land ouer with Rye, and then plow it downeward which is vnder furrow: & as ſoone as it is plowed, you ſhall then with a paire of Iron

Of Sowing March-Rye.

Harrowes harrow it all ouer so exceedingly, that the mould may be made as fine, and the land lie as smoth as is possible.

Of the harrow. Now because I haue in the former Chapters spoke of Harrowes and harrowing, yet haue not deliuered vnto you the shape and proportion thereof, and because both the woodden harrow and the Iron harrow haue all one shape, and differ in nothing but the teeth onely, I thinke it not amisse before I proceede any further to shew you in this Figure the true shape of a right Harrow.

The Harrow.



The parts of this Harrow consisteth of buls, staues, and teeth: of buls, which are broad thicke peeces eyther of well seasoned Willow, or Sallow, being at least three inches euery way square, into which are fastned the teeth: of staues, which are round peeces of well seasoned Ash, being about two inches and a halfe about, which going thorow the buls, holde the buls firmely in equall distance one from the other: and of teeth, which are either long pinnes

of

of wood or Iron, being at least fiue inches in length, which are made fast, and set slope-wise through the buts.

Now you shall vnderstand that Harrowes are of two kindes, that is, single and double: the single Harrow is called of Husbandmen the Horse-harrow, and is not aboue foure foote square: the double Harrow is called the Ore-harrow, and it must be at least seauen foote square, and the teeth must euer be of Iron. Now whereas I speake of the Horse-harrow and the Ore-harrow, it is to be vnderstood that the single Harrow doth belong to the Horse, because Horses drawing single, doe draw each a seuerall Harrow by himselfe, albeit in the common vse of harrowing, we couple two horses euer together, and so make them draw two single Harrowes: but Oxen not being in good Husbandry to be separated, because euer two must draw in one yoake, therefore was the double Harrow deuised, containing in substance and worke as much as two single Harrowes. The diuersitie of Harrowes.

Now for the vse of Harrowes. The wooden Harrow which is the Harrow with wooden teeth, is euer to be vsed vpon clay grounds and light grounds, which through drynesse doth grow lose, and fals to mould of it owne nature, as most commonly Sand grounds doe also: and the Iron Harrow which is the Harrow with Iron teeth, is euer to be vsed vpon binding grounds, such as through drynesse grow so hard that they will not be sundered, and through wet turne sone to mire and lose dust. Now whereas there be mingled earths, which neither willingly yeeld to mould, nor yet bindes so sore, but small industry breakes it, of which earth I shall speake hereafter, to such grounds the best Husbands vse a mixture, that is to say, one wooden Harrow, and one Iron Harrow, that the wooden Harrow turning euer and lowsening the lowest mould, the Iron Harrow comming after, may breake the stiffer clots, and so consequently turne all the earth to a fine mould. And thus much for Harrowes. The vse of Harrowes.

Now to returne to my former purpose touching the tillage of this red Sand: if (as before I said) you finde any Of the sowing of Pulse.

part of your fallow-field too weake to beare Barley, then is your March-Rye, a graine which will take vpon a harder earth: but if the ground be too weake either for Barley or Rye, (for both those Seedes desire some fatnesse of ground) then shall you spare plowing it at all vntill this time of the yeere, which is mid-March, and then you shall plow it, and sow it with either the smallest Pease you can get, or else with our true English Fitches, which by forraine Authors are called Lentles, that is, white Fitches, or Lupines, which are red Fitches: for all these three sorts of Pulse will grow vpon very barraine soiles, and in their growth doe manure and make rich the ground: yet your Pease desire some hart of ground, your Lentles, or white Fitches, lesse, and your Lupines, or red Fitches, the least of all, as being apt to grow vpon the barrainest soile: so likewise your Pease doe manure barraine ground well, your Lentles better, and your Lupines the best of all.

Of Pease, Lentles, and Lupines.

Now for the nature and vse of these graines, the Pease as all Husbandmen know, are both good for the vse of man in his bread, as are vsed in Leicester shire, Lincolne-shire, Nottingham-shire, and many other Countries: and also for Horses in their Prouender, as is vsed generally ouer all England: for Lentles, or white Fitches, or the Lupines which are redde Fitches, they are both indifferent good in bread for man, especially if the meale be well scalded before it be kneaden (for otherwise the sauour is exceeding rancke) or else they are a very good foode being sodden in the manner of Leaps-Pease, especially at Sea, in long iourneyes where fresh meate is most exceeding scarce: so that rather then your land should lye idle, and bring forth no profit, I conclude it best to sow these Pulses, which both bring forth commoditie, and also out of their owne natures doe manure and inrich your ground, making it more apt and fit to receiue much better Seede.

For the manner of sowing these three sorts of Pulse: you shall sow them euery vnder furrow, in such sort as is described for the sowing of Pease and Beanes vpon the white

white or gray clay which is of indifferent drinesse and apt to breake.

Now the limitation for this Ardor or sede time, is from the middest of March, till the middest of Aprill: then from the middest of Aprill, till the middest of May, you shall make your especiall worke, to be onely the leading forth of your Manure to that field which you did fallow, or lay tilth that present yeere immediately after Christmas, and of which I first spake in this Chapter. And herein is to be understood, that the best and principallest Manure for this redde-land, is the ouldest Manure of beasts which can be gotten, which you shall know by the exceeding blacknesse and rottennesse thereof, being in the cutting both soft and smoth, all of one substance, as if it were well compact morter, without any shew of straw or other stuffe which is unrotted, for this dung is of all the fattest and coolest, and doth best agree with the nature of this hot sand. Next to the dung of beasts, is the dung of Horses if it be old also, otherwise it is somewhat of the hottest, the rubbish of old houses, or the sweepings of flowres, or the scowrings of old Fish-ponds, or other standing waters where beasts and horses are used to drinke, or be washt, or whereunto the water and moisture of dunghills haue recourse are all good Manures for this redde-land: as for the Manure of Sheepe upon this redde-land, it is the best of all in such places as you meane to sow Rie, but not fully so good where you doe intend to sow your Barley: if it be a cold moist redde-sand (which is seldome found but in some particular low countries) then it doth not amisse to Manure it most with Sheepe, or else with Chaulke, Lime, or Ashes, of which you can get the greatest plentie: if this soile be subiect to much weede and quickes, as generally it is, then after you haue torne vp the weedes and quickes with Harrowes, you shall with rakes, raks them together, and laying them in heapes vpon the land, you shall burne them and then spreading the ashes they will be a very good Manure, and in short space destroy the weedes also; likewise

Of Manuring.

likewise if your land be much ouergrowne with weedes, if when you sheare your Rie you leaue a good long stubble, and then mowing the stubble burne it vpon the land, it is both a good Manure and also a good meanes to destroy the weedes.

Of sowing Barley.

After your Manure is lead forth and either spread vpon the lands, or set in great heapes, so as the land may be couered ouer with Manure (for it is to be obserued that this soile must be throughly Manured) then about the middest of May, which is the time when this worke should be finished, you shall repaire with your Plough into the other fallow field, which was prepared the yeere before for this yeeres Barley, & there you shall sow it all ouer with Barley about furrow, that is to say, you shall first Plough it, then sow it, and after Harrow it, making the mould as fine and smooth as may be, which is done with easie labour, because this land of it owne nature is as fine as ashes.

Now the limitation for this seede time, is from the middest of May, till the middest of June, wherein if any man demaund why it should not be sowne in March and Aprill, according as it is sowne in the former soiles, I answere, that first this redde land cannot be prepared, or receiue his full season in weather, and earings, before this time of the yeere, and next that these redde lands, by how much they are hotter and drier then the other clales, by so much they may well stay the longer before they receiue their seede, because that so much the sooner the seede doth sprout in them, & also the sooner ripen being kept warmer at the rote then in any could soile whatsoeuer. As sone as the middest of June approacheth, you shall then beginne to Summer-stirre your fallow field, and to turne your Manure into your land, in such sort as you did vpon your clay soiles, for this Ardor of Summer stirring altereth in no soile, and this must be done from the middest of June, till the middest of July, for as touching sleighting, clotting, or smoothing of this Barley field, it is seldome in vse, because the fineneſſe of the sand will lay the land smooth inough without

Of Summer-stirring.

Of sleighting.

without sleighting: yet if you finde that any particular land lieth more rough then the rest, it shall not be amisse, if with your backe Harrowes you smoth it a little within a day or two after it is sowne.

From the middest of July vntill the middest of August, you shall foile and throw downe your fallow field againe, if your lands lie well and in good order, but if any of your lands doe lie in the danger of water, or by vse of Plowing are growne too flat, both which are hinderances to the growth of Corne, then when you foile your lands you shall Plow them vpward, and so by that meanes raise the ridges one furrow higher. After you haue foiled your land, which must be about the middest of August, then will your Barley be ready to mowe, for these hot soiles haue euer an earely haruest, which as soone as it is mowne and carried into the Barne, forthwith you shall with all expedition carry forth such Manure as you may conueniently spare, and lay it vpon that land from whence you receiued your Barley, which is most barraine: and if you want cart Manure, you shall then lay your fould of Sheepe thereupon, and as soone as it is Manured, you shall immediately Plow both it & the rest, which Ardor should be finished by the middest of September, and so suffered to rest vntill the beginning of October, at which time you shall begiune to sow all that field ouer with Rye in such sort as hath beene spoken of in former places.

Of Foiling.

Of sowing Rye.

Now in as much as the ignorant Husbandman may very easiely imagine that I reckon vp his labours too thicke, and therein leaue him no leasure for his necessarie businesses, especially because I appoint him to foile his land from the middest of July, till the middest of August, which is both a busie time for his Hay haruest, and also for his Rye shearing.

Obiection.

To this I make answere, that I write not according to that which poore men are able (for it were infinit to looke into estates) but according as euery good Husband ought, presupposing that he which will liue by the Plough, ought

Answere.

to pursue all things belonging vnto the Plough, and then he shall finde that there is no day in the yeare, but the Sabboth, but it is necessarie that the Plough be going: yet to reconcile the poore and the rich together, they shall vnderstand, that when I speake of Plowing in the time of Harvest, I doe not meane that they should neglect any part of that principall worke, which is the true recompence of their labour: but because whilst the dew is vpon the ground, or when there is either raine or mizling there is then no time for Harvest worke, then my meaning is that the carefull Husbandman shall take those aduantages, and rising earelier in the mornings, be sure to be at his Plough two howers before the dew be from the ground, knowing that the getting but of one hower in the day compasseth a great worke in a month, neither shall hee neede to feare the ouer toiling of his cattell, sith at that time of the yeare Graſſe being at greatest plenty, strongest and fullest of hart, Corne scattered almost in euery corner, and the mouth of the beast not being muzeld in his labour, there is no question but he will indure and worke more then at any other season.

Of Winter ridging.

In the beginning of November, you shall beginne to Winter-ridge your fallow, or tilth-field, which in all points shalbe done according to the forme described in the former soiles: for that Ardor of all other neuer altereth, because it is as it were a defence against the latter spring, which else would fill the lands full of weedes, and also against the rigor of Winter, and therefore it doth lay vp the furrow close together, which taking the season of the frost, winde, and weathe, rmakes the mould ripe, mellow, and light: and the limitation for this Ardor, is from the beginning of November, vntill the middest of December.

Of the Plough.

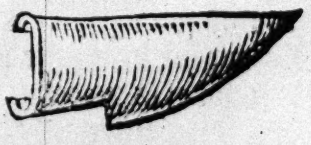
Now as touching the Plough which is best and most proper for this redde-land, it differeth nothing in shape and composure of members from that Plough which is described for the blacke Clay, hauing necessarily two hales, because the ground being lose and light, the

Plough

Plough will with great difficulty hold land, but with the leaſt diſorder be euer ready to runne into the furrow, ſo that a right hand hale is moſt neceſſarie for the houlding of the plough euen, onely the difference of the two Ploughes conſiſteth in this, that the plough for this red-ſand, muſt be much leſſe then the plough for the blacke Clay houlding in the ſizes of the timber the due proportion of the plough for the white or gray clay, or if it be somewhat leſſe it is not amiſſe, as the head being eightéene inches, the maine beame not aboue foure foote, and betwéene the hinder part of the reſt, and the out-moſt part of the plough head in the hinder end not aboue eight inches. Now for the Plough-Irons which doe belong vnto this plough, the Coulture is to be made circular, in ſuch proportion as the coulture for the gray, or white clay, and in the placing, or tempering vpon the Plough it is to be ſet an inch at leaſt lower then the ſhare, that it may both make way before the ſhare, and alſo cut déeper into the land, to make the furrow haue more eaſie turning. Of the coulture.

Now for the ſhare, it differeth in ſhape from both the former ſhares, for it is neither ſo large nor out-winged, as that for the gray Clay, for this ſhare is onely made broad to the Plough ward, and ſmall to the point of the ſhare, with onely a little peake and no wing according to this figure. Of the ſhare.

The ſhare.

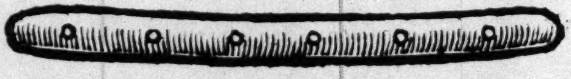


Theſe Plough-irons, both coulture and ſhare, muſt be well ſtéeled and hardned at the points, becauſe theſe ſandy ſoiles being full of moiſture and gréete, will in ſhort ſpace weare and conſume the Irons, to the great hinderance

and coſt of the Huſbandman, if it be not preuented by ſteele and harding, which notwithſtanding will waſte alſo in theſe ſoiles, ſo that you muſt at leaſt twiſe in euery Ardor haue your Irons to the Smith, and cauſe him to repaire them both with Iron and ſteele, beſides theſe Irons, of coulture and ſhare, you muſt alſo haue a long piece of Iron, which muſt be iuſt of the length of the Plough head, and as broad as the Plough head is thicke, and in thicknelle a quarter of an inch: and this piece of Iron muſt be nailed vpon the outſide of the Plough head, nert vnto the land, onely to ſaue the Plough head from wearing, for when the Plough is worne it can then no longer hould the land, and this piece of Iron is called of Huſbandmen the Plough-ſlip and preſenteth this figure.

Of the plough-ſlip.

The Plough ſlip.



Ouer and beſides this Plough-ſlip, their are certaine other pieces of Iron which are made in the faſhion of broad thinne plates, and they be called Plough clouts, and are to be nailed vpon the ſhelboard, to defend it from the earth or furrow which it turneth ouer, which in very ſhort ſpace would weare the wood and put the Huſbandman to double charge.

Of Plough clouts.

Thus hauing ſhewed you the parts, members, and implements, belonging to this Plough, it reſts that I proceede vnto the teame or draught: for to ſpeake of the vſe and handling of this Plough, it is needeleſſe, becauſe it is all one with thoſe Ploughes, of which I haue ſpoken in the former Chapters, and he which can hould and handle a Plough in ſtiffe clayes muſt needes (except he be exceeding ſimple) hould a Plough in theſe light ſands, in as much as the worke is much more eaſie, and the Plough a great deale leſſe chargeable.

The houlding of the Plough.

Now

Now for the Draught or Teame, they ought to be as in the former Soiles, Oxen or Horses, yet the number not so great: for foure Beasts are sufficient to plow any Ardor vpon this soile, nay, three Horses if they be of reasonable strength will doe as much as fiue vpon either of the Clay-soiles: as for their attire or Harnessing, the Bearegeares, before described, are the best and most proper. And thus much concerning this red Sand, wherein you are to take this briefe obseruation with you, that the Graines which are best to be sowne vpon it, are onely Rye, Barley, small Pease, Lentles and Lupines, otherwise called Fitches, and the graines to which it is aduerse, are Wheat, Beanes and Maslin. Of the draught.

Chap. VIII.

The manner of plowing the white Sand, his Earings, Plough, and Implements.

Next vnto this red Sand, is the white sand, which is much more barraine then the red Sand, yet by the industry of the Husbandman in plowing, and by the cost of Manure it is made to beare corne in reasonable plentie. Now of white Sands there be two kindes, the one a white Sand mixt with a kinde of Marle, as that in Norfolke, Suffolke, and other such like places butting vpon the Sea-coast: the other a white Sand with Pible, as in some parts of Surrey, about Ancaster in Lincolne shire, and about Salisbury in Wil-shire.

Now for this white Sand with Pible, it is the barrainest, and least fruitfull in bringing forth, because it hath nothing but a hot dustie substance in it. For the manner of Earing thereof, it agreeth in all points with the redde Sand, the Ardors being all one, the Tempers, Manurings and all other appurtenances: the Seede also which it delights in is all one with the red Sand, as namely, Rye, Of the white Sand with Pible.

Barley, Peaſe and Fitches. Wherefore who ſo ſhall dwell vpon ſuch a ſoile, I muſt referre him to the former Chapter of the red Sand, and therein he ſhall finde ſufficient inſtruction how to behaue himſelfe vpon this earth: remembring that in as much as itis more barraine then the red Sand, by ſo much it craueth more care and coſt, both in plowing and manuring thereof, which two labours onely make perfect the ill ground.

Of the white Sand with Marle.

Now for the white Sand which hath as it were a certaine mirture, or nature of Marle in it, you ſhall vnderſtand that albeit vnto the eye it be more dry and duſtie then the red Sand, yet it is fully as rich as the red Sand: for albe it doe not beare Barley in as great plenty as the red Sand, yet it beareth Wheate abundantly, which the red Sand ſeldome or very hardly bringeth forth.

Of Fallowing.

Wherefore to proceede to the Earings or tillage of this white Marly ſand, you ſhall vnderſtand that about the middeſt of January is fit time to beginne to fallow your field which ſhall be trith and reſt for this yeere: wherein by the way, before I proceede further, you ſhall take this obſeruation with you, that whereas in the former ſoiles I diuided the fields into three & foure parts, this ſoile cannot conuenientiy, if it be well huſbanded, be diuided into any more parts then two, that is to ſay, a fallow field, and a Wheat-field: in which Wheate-field if you haue any land richer then other, you may beſtow Barley vpon it, vpon the ſecond you may beſtow Wheat, vpon the third ſort of ground Rye, and vpon the barraineſt, Peaſe or Fitches: and yet all theſe muſt be ſowne within one field, becauſe in this white ſand, Wheate and Rye will not grow after Barley or Peaſe, nor Barley and Peaſe after Wheate or Rye. Your fields being then diuided into two parts, that is, one for corne, the other for reſt, you ſhall as before I ſaid, about the middeſt of January beginne to fallow your Tith field, which in all obſeruations you ſhall doe according as is mentioned for the red ſand.

About the middeſt of March, if you haue any barraine

or

or wasted ground within your fallow field, or if you haue any occasion to breake vp any new ground, which hath not beene formerly broake vp, in eyther of these cases you shall sow Pease or Fitches thereupon, and those Pease or Fitches you shall sow vnder furrow as hath beene before described. Of sowing Pease.

About the middest of Aprill you shall plow your fallow-field ouer againe, in such manner as you plowed when you fallowed it first: and this is called Spring-fallowing, and is of great benefit because at that time the weedes and quiskes beginning to spring, nay, to flourish, by reason that the heate of the climbe puts them forth sooner then in other soyles, if they should not be plowed vp before they take too strong rote, they would not onely ouer-runne, but also eate out the hart of the Land. Of Spring-fallowing.

About the middest of May you shall beginne to sow your Barley vpon the richest part of your old fallow-field, which at the Michaelmas before, when you did sow your Wheate, and Rye, and Maslin, you did reserue for that purpose: and this Barley you shall sow in such sort as is mentioned in the former Chapter of the red Sand, in so much that this Ardor being finished, which is the last part of your Seede-time, your whole field shall be furnished eyther with Wheate, if it hold a temperate fatnesse, or with Wheate and Barley, if it be rich and richer, or with Wheate, Barley and Pulse, if it be rich, poore or extreame barraine: and the manner of sowing all these seuerall seedes is described in the Chapters going before. Of sowing Barley.

About the middest of June you shall beginne to Summer-stirre your fallow-field, in such sort as was spoken of in the former Chapters concerning the other soiles: for in this Ardor there is no alteration of methode, but onely in gouernment of the Plough, considering the heauinesse and lightnesse of the earth. During this Ardor you shall busily apply your labour in leading forth your Manure, for it may at great ease be done both at one season, neyther the Plough hindering the Cart, nor the Cart staying the Plough: Of Summer-stirring.

Plough: for this soile being more light and easie in worke then any other soile whatsoeuer, doth euer preserue so many Cattell for other imployment that both workes may goe forward together, as shall be shewed when wee come to speake of the Plough, and the Teame which drawes it.

Of Manuring. Now as touching the Manures most fit for this soyle, they be all those of which we haue formerly written, ashes onely excepted, which being of an hot nature doe scald the Séede, and detaine it from all fruitfulnesse, being mixt with this hot soile, so is likewise Lyme, and the burning of stubble: other Manures are both good and occasion much fertilitie, as being of a binding and cole nature, and holding together that lowsenesse which in his too much separation taketh all nutriment from the earth.

Of Weeding. After you haue ledde forth your Manure, and Summer-fird your Land, you shall then about the beginning of Julie loke into your Corne-field, and if you perceiue any Thistles, or any other superfluous weedes to annoy your Corne, you shall then (as is before said) either cut, or plucke them vp by the rootes.

Of Foyling. About the middest of August you shall beginne to foile or cast downe your fallow-field againe, and in that Ardor you shall be very carefull to plow cleane and leaue no weedes vncut vp: for in these hot soiles if any weedes be left with the least roote, so that they may knit and bring forth séede, the annoyance thereof will remaine for at least foure yéeres after, which is a double fallowing. And to the end that you may cut vp all such weedes cleane, although both your Share and Coulture misse them, you shall haue the rest of your Plough in the vnder part which strokes alongst the earth filled all full of dragges of Iron, that is, of olde crooked nailes or great tenter-hookes, such as vpon the putting downe of your right hand when you come néere a weed shall catch hold thereof and teare it vp by the rootes, as at this day is vsed be many particular Husbands in this Kingdome, whose cares, skils, and industries are not inferiour to the best whatsoeuer.

About

About the middeſt of September, you ſhall beginne to ſow your Wheate and Rye vpon your fallow field, which Graine vpon this ſoile is to be reckoned the moſt principall: and you ſhall ſow it in the ſame manner that is deſcribed in the former Chapters, wherein your eſpecialleſt care is the choiſe of your ſeede: for in this ſoile your whole ſtraw Wheate, nor your great Pollard taketh any delight, neither your Organe, for all thoſe three muſt haue a firme and a ſtrong mould: but your Chiter-wheate, your Flaxen-wheate, your White-pollard, and your Red-wheate, which are the Wheates which yeild the pureſt and fineſt meale, (although they grow not in ſo great abundance) are the ſeedes which are moſt proper and naturall for this ſoile. As for Rye or Maſlin, according to the goodneſſe of the ground ſo you ſhall beſtow your ſeede: for it is a generall rule, that whereſoeuer your Wheate growes, there will euer Rye grow, but Rye will many times grow where Wheate will not proſper; and therefore for the ſowing of your Rye, it muſt be according to the temper of the earth, and the neceſſitie of your houſhold: for Wheate being a richer graine then Rye, if you be aſſured that your ground will beare Wheate well, it is ſmall huſbandrie to ſow more Rye or Maſlin then for your houſe: but if it be too hot for Wheate, and kindly for Rye, then it is better to haue good Rye, then ill Wheate. Now for the ſowing of your Rye or Maſlin in this ſoile, it differeth nothing from the former ſoiles, either in plowing or any other obſeruation, that is to ſay, it muſt be plowed aboue furrow: for Rye being the moſt tender graine, it can neither abide the waight of earth, nor yet moiſture; the one, as it were, burying, and the other drowning the vigour and ſtrength of the ſeede. Of Sowing Wheate and Rye. The choiſe of Seede.

About the beginning of November you ſhall Winter-ridge your fallow field, I meane that part which you doe preſerue for Barley (for the other part is furniſhed with ſeede) and this Winter-riding differeth nothing from the Winter riding of other ſoiles, onely you ſhall a little more preciſely obſerue to ſet vp your lands more ſtraight and Of Winter-ridging.

high then in other soiles, both to defend them from wet, which this soile is much subiect vnto, because commonly some great riuer is neare it, and also for the preseruing of the strength and goodnesse of the Manure within the land which by lying open and vnclosed would soone be washt forth and consumed.

Of the clensing of lands, or drawing of water-furrowes.

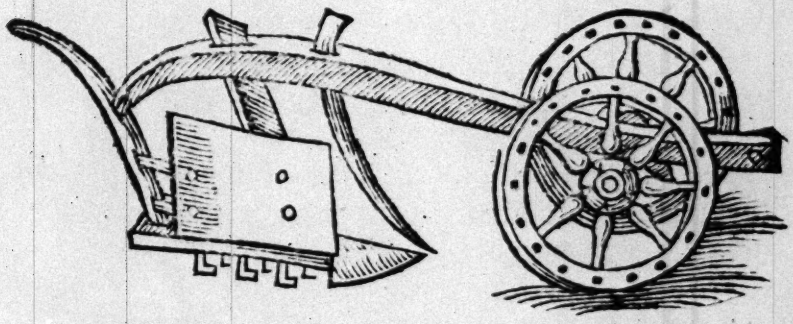
Now sith I haue here occasion to speake something of the drayning of lands, and the keeping of them from the annoyance of superfluous wet, whether it be by inundation or otherwise, you shall vnderstand that it is the especiall office and dutie of euery good Husbandman, not onely in this soile, but in all other whatsoeuer, to haue a principall respect to the keeping of his land dry, and to that end hee shall diligently (as soone as he hath Winter-rigged his land) take a carefull view how his lands lie, which way the descent goes from whence annoyance of water may possibly come, and so consequently from these obseruations, with a Spade or strong Plough, of extraordinary greatnesse, draw certaine deepe furrowes from descent vnto descent, by which meanes all the water may be conuayed from his lands, eyther into some common Sewer, Lake, Brooke, or other maine Riuer: and to this end it is both a rule in the common Lawes of our Land, and a laudable custome in the Common-wealth of euery Towne, that for as much as many Townes haue their lands lie in common, that is to say, mixed neighbour with neighbour, few or none hauing aboue two or three lands at the most lying together in one place, therefore euery man shall ioyne, and make their water furrowes one from another, vntill such time as the water be conueyed into some common issue, as well hee whose lands lie without all danger, as he that is troubled with the greatest annoyance, and herein euery one shall beare his particular charge: which is an Act of great vertue and goodnesse.

Of the Plough.

Now for the Plough which is to plow this white sand it doth differ nothing in size, proportion, and vse of handling from the Plough described for the red Sand, onely it hath one addition more, that is to say, at the further end of the

the maine Beame of the Plough, where you fixe your Plough-feete, there you shall place a little paire of round wheeles, which bearing the Beame vpon a loose moving Arletree, being iust the length of two furrows and no more, doth so certainly guide the Plough in his true furrow that it can neither lose the land by swarving (as in these light soiles euery Plough is apt to doe) nor take too much land, eyther by the grossenesse of the Plough or sharpnesse of the Irons, neither can it drowne through the easie lightnesse of the earth, nor runne too shallow through the fastnesse of the mould, but the wheeles being made of a true proportion, which should not be aboue twelue inches from the centre, the Plough with a reasonable hand of gouernment shall runne in a direct and euen furrow: the proportion of which Plough is contained in this Figure.

The Plough with Wheeles.



This Plough of all others I hold to be most ancient, and as being the modell of the first inuention, and at this day is preserued both in France, Germany, & Italy, and no other proportion of Ploughes knowne, both as we perceiue by our experience in seeing them plow, & also by reading of their writings: for neither in Virgil, Columella, Xenophon,

nor any olde Writer: nor in Heresbachius, Steuens, nor Libault, beinglater Writers, finde wee any other Plough bequeathed vnto our memories. Yet it is most certaine, that in many of our English soiles, this Plough is of little profit, as we finde by daily experience both in our clayes, and many of our mixt earths: for in truth this Plough is but onely for light, sandy, or grauelly soiles as for the most part these forraine Countries are, especially about the sea-coast, or the borders of great Cities, from whence these Writers most generally take the presidents for their writings.

Now for the parts of this Plough, it consisteth of the same members which the former Ploughs doe, onely that in stead of the Plough-sote it hath a paire of wheeles. It hath also but one Hale, in such sort as the Plough for the gray or white clay. The beame also of this Plough is much more straight then the former, by which meanes the Sheath is not full so long. The Irons belonging vnto this Plough are of the fashion of the former Irons, onely they be somewhat lesse, that is to say, the Coulture is not so long, neyther so full bent as that for the red Sand, nor so straight as that for the blacke clay, but as it were holding a meane betweene both: so likewise the Share is not fully so broad as that for the red sand, nor so narrow as that for the gray clay, but holds as it were a middle size betweene both, somewhat leaning in proportion to the shape of that for the blacke clay. As for the Plough-slip, Plough-clouts, and other implements which are to defend the wood from the hardnesse of the earth, they are the same, and in the same wise to be vsed as those for the red Sand.

Of the plough-Irons.

Of the draught.

Now for the Draught or Teame which drawes this Plough, they are as in all other Draughts, Oxen or Horses, but for the number thereof they differ much from those which are formerly written of: for you shall vnderstand that in this white sandy soile, which is of all soiles the lightest, eyther two good Horses, or two good Oxen are a number sufficient to plow any Ardor vpon this soile whatsoeuer,

as

as by daily experience we may see in those countries whose soile consists of this white light Sand, of which wee haue now written: neyther shall the Plow-man vpon this soile nede any person to driue or order his Plough more then himselfe: for the soile being so light and easie to cut, the Plough so nimble, and the Cattell so few and so neare him, hauing euer his right hand at libertie (because his plough hath but onely a left hand Hale) he hath liberty euer to carry a goade or whip in his right hand, to quicken and set forward his Cattell, and also a line which being fastned to the heads of the Beasts, he may with it euer when hee comes to the lands end, stop them and turne them vpon which hand he pleases. And thus much for the tillage and ordering of this white Sand.

Chap. IX.

The manner of plowing the Grauell with Pible stones, or the Grauell with Flint, their Earings, Plough, and implements.

HAuing in the plainest manner I can written sufficiently already of the foure simple and vncompounded soiles, to wit, two Clayes, blacke and gray, and two Sands, red and white, it now rests that I also giue you some perfect touch or taste of the mixt or compounded soiles, as namely, the grauell which is a kinde of hard sand, clay and stone mixt together: and of Grauels there be two kindes, that is to say, one that is mixt with little small Pible stones, as in many parts of Middlesex, Kent, and Surry: and the Grauell mixt with broad Flints, as in many parts of Hartford-shire, Essex, and sundry such places. These Grauels are both, in generall, subiect to much barraunesse, especially if they be accompanied with any extraordinary moisture, yet with the good labour of plowing, and with the cost of much Manure, they are

brought to reasonable fruitfulnesse, where it comes to passe that the Plow-man which is master of such a soile, if either he liue not neare some Citie or Market-towne, where great store of Manure, by the concourse of people, is daily bred, and so consequently is very cheape, or else haue not in his owne store and breede, meanes to raise good store of Manure, hee shall seldome thriue and prosper thereupon. Now although in these grauell soiles there is a diuersity of mixture, as the one mingled with small Pibles, which indeede is the worst mixture, the other with broad Flints, which is the better signe of fruitfulnesse: yet in their order of tillage or Earings, in their weeding and cleansing, and in all other ardors and obseruations, they differ nothing at all, the beginning and ending of each seuerall worke being all one.

Now for the manner of worke belonging vnto these two soiles, it altereth in no respect nor obseruation either in Plough, plowing, manuring, weeding, or any other thing whatsoeuer, from that of the white sand, the same times of the yeere, the same Seedes and the same Earings being euer to be obserued. Wherefore it shall be superfluous to write so amply of these soiles as of the former, because being all one with the white Sand, without a teration, it were but to write one thing twise, and therefore I referre the Reader to the former Chapter, and also the Husbandman that shall liue vpon either of these soiles, onely with these few caueats: First, that for the laying his lands; he shall lay them in little small stitches, that is, not hauing aboue foure furrowes laid together, as it were for one land, in such sort as you see in Hartford-shire, Essex, Middlesex, Kent and Surry: for this soile being for the most part subiect to much moisture and hardnesse, if it should be laid in great lands, according to the manner of the North parts, it would ouer-burden, choake and confound the seed which is throwne into it. Secondly, you shall not goe about to gather off the stones which seeme as it were to couer the lands, both because the labour is infinite and impossible, as also because

those

thoſe ſtones are of good vſe, and as it were a certaine Manuring and helpe vnto the ground: for the nature of this Grauell being colde and moiſt, theſe ſtones doe in the winter time, defend and keepe the ſharpneſſe of the Froſts and Bleake windes from killing the heart or roote of the ſeedes, and alſo in the Summer it defends the ſcorching heate of the Sunne from parching and drying vp the Seede, which in this graueliy ſoile doth not lie ſo well couered, as in other ſoyles, eſpecially if this kinde of earth be mixtroned with any great hils (as moſt commonly it is) the reflection whereof makes the heate much more violent. And laſtly, to obſerue that there is no manure better or more kindly for this kinde of earth then Chaulke, white Marle, or Lyme: for all other matters whatſoeuer, the former Chapter of the white Sand, will giue you ſufficient inſtructions.

Chap. X.

The manner of plowing the blacke Clay mixt with red Sand, and the white Clay mixt with white Sand, their Earings, Plough, and Implements.

NExt to theſe graueliy ſoiles, there be alſo two other compounded earths, as namely, the blacke Clay mixt with red Sand, and the white Clay mixt with white ſand, which albe they differ in compoſition of mould, yet they hold one nature in their Tillage and Huſbandry: wherefore firſt to ſpeake of the blacke Clay mixt with red Sand, which (as before I ſaid) is called of Huſbandmen an haſſell earth, you ſhall vnderſtand that it is a very rich and good ſoile, very fruitfull both for Corne and Graſſe: for Corne, being apt to beare any ſeede whatſoeuer: and for Graſſe, as naturally putting it forth very early in the yeere, by which your Cattell ſhall get reliefe ſooner then in other ſoiles of colder nature: for both the blacke and white claies doe ſeldome flowrith with any

any ſtore of Graſſe before June, which is the time of wood-ſcare, and this ſoile will boaſt of ſome plenty about the beginning of Aprill at the furtheſt: but for Graſſe we ſhall ſpeake in his proper place.

Of fallowing. Now for his tillage it is thus: you ſhall about the middeſt of January, beginne to fallow that field which you intend that yeare ſhall lye at reſt or tilth, and you ſhall fallow it in ſuch ſort as is ſpecified in the Chapter of the blacke clay: onely you ſhall take ſmall furrowes and Plow the land cleane, being ſure to open and caſt the land downeward if the land lie high and round, otherwiſe you ſhall neuer at any time caſt the land downe but ridge it vp, that is to ſay, when you fallow it, you ſhall caſt the firſt furrow downeward, and ſo likewiſe the ſecond, which two furrowes being cleane ploughed, will lay the land open inough, that is, there will be no part of the riõge vnplough-ed: which done, by changing your hand and the gate of your Plough, you ſhall plough thoſe furrowes backe againe and lay them vpward, and ſo plough the whole land vpward, alſo laying it round and high: the reaſon for this manner of plowing being this, that for as much as this land being mixt of clay and ſand, muſt nedes be a ſore binding land, therefore if it ſhould be laid flat, if any great raine or wet ſhould fall, and a preſent drought follow it, neither ſhould you poſſibly force your Plough to enter into it and breake it, or being broken ſhould you get ſo much mould as to couer your Corne and giue the ſeede comfort, whereas vpon the contrary part, if it be laid high and vpright, it muſt neceſſarily be laid hollow and light, in ſo much that you may both Plough it at your pleaſure, and alſo beget ſo perfect a mould as any other ſoile whatſoeuer, both becauſe the wet hath liberty to auoide through the hollowneſſe, and alſo becauſe the Sunne and weather hath power to enter and ſeaſon it, wherefore in concluſion you ſhall fallow this field downeward if it lye high and vpright, otherwiſe you ſhall fallow it vpward as the meanes to bring it to the beſt Ardor.

Now

Now for this fallow field it must euer be made where the yeere before you did reape your Pease, in case you haue but three fields, or where you did reape your Wheate, Rye, and Mallin, in case you haue foure fields, according to the manner of the blacke clay.

About the middest of February, which is within a day or two of Saint Valentines day, if the season be any thing constant in faireneſſe and drineſſe, you shall then beginne to sow your Pease, for you must vnderstand that albeit this soile will beare Beanes, yet they are nothing so naturall for it as Pease, both because they are an hungry seede and doe much impaire and waste the ground, and also because they prosper best in a fat, lose, and tough earth, which is contrary to this hard and drie soile: but especially if you haue foure fields, you shall forbeare to sow any Beanes at all, least you lose two commodities, that is, both quantitie of graine (because Beanes are not so long and fruitfull vpon this earth, as vpon the clayes) and the Manuring of your ground, which Pease out of their owne natures doe, both by the smothering of the ground and their owne fatneſſe, when your Beanes doe pill and sucke the hart out of the earth. Of sowing Pease.

Now for the manner of sowing your Pease, you shall sow them aboue furrow, that is, first plough the land vpward, then immediately sow your Pease, and instantly after Harrow them, the Plough, the Seedes-man, and the Harrower, by due course, following each other, and so likewise you may sow Oates vpon this soile.

About the middest of March, which is almost a fortnight before our Lady day, you shall beginne to sow your Barley, which Barley you shall sow neither vnder-furrow nor aboue, but after this order: first, you shall plow your land downeward, beginning at the furrow and so ascending vpward to the ridge of the land, which as soone as you haue opened, you shall then by pulling the plough out of the earth, and laying the shelboard crosse the ridge, you shall fill the ridge in againe with the same mould which Of sowing Barley.

you plowed vp: this done, your ſeedes-man ſhall bring his Barley and ſow the land aboue furrow: after the land is ſowne, you ſhall then Harrow it as ſmall as may be, firſt with a paire of wodden Harrowes, and after with a paire of Iron Harrowes, or elſe with a double Ore Harrow, for this earth being ſomewhat hard and much binding, will aſke great care and diligence in breaking.

Of ſleighting. After your Barley is ſowne, you ſhall about the latter end of Aprill beginne to ſmoth and ſleight your land, both with the backe Harrowes and with the rouler, and loke what clots they faile to breake, you ſhall with clotting beetles beate them aſunder, making your mould as fine and laying your land as ſmoth as is poſſible.

Of Summer-ſtirring. About the middeſt of May, you ſhall, if any wet fall, beginne to Summer-ſtirre your land, or if no wet fall, you ſhall doe your indeauour to Summer ſtirre your land, rather aduenturing to breake two ploughes, then to loſe one day in that labour, knowing this, that one land Summer-ſtird in a dry ſeaſon, is better then three Summer-ſtird in a wet or moiſt weather, both becauſe it giues the earth a better temper, and kils the weedes with more aſſuredneſſe, and as I ſpeake of Summer-ſtirring, ſo I ſpeake of all other Ardors, that the drier they are done the better they are euer done: and in this ſeaſon you ſhall alſo gather the ſtones from your ground.

Obiection. Now it may be obiected, that if it be beſt to plough in drie ſeaſons, it is then beſt to fallow alſo in a dry ſeaſon, and by that meanes not to beginne to fallow vntill the beginning of May, as is preſcribed for the blacke clay, and ſo to deferre the Summer-ſtirring till the nert month after, ſith of neceſſitie January muſt either be wet or elſe vnkindely.

Anſwere. To this I make anſwere, that moſt true it is, that the land which is laſt fallowed is euer the beſt and moſt fruitfull, yet this mirt earth which is compound of ſand and clay, is ſuch a binding earth, that if it be not taken and fallowed in a moiſt time of the yeere, as namely, in

January

January or Febʒuary, but suffered to lye till May, at which time the dʒought hath so entered into him, that the greatest part of his moisture is decaied, then I say, the nature of the ground is such and so hard, that it wilbe impossible to make any plough enter into it, so that you shall not onely aduenture the losse of that speciall Ardor, but also of all the rest which should follow after, and so consequently lose the pʒofit of your land: where contʒary wise if you fallow it at the beginning of the yʒere, as in January, and Febʒuary, albe they be wet, yet shall you lay vp your furrowes and make the earth moʒe lose, by which meanes you shall compasse all the other Earings which belong to your soile: foʒ to speake briefely, late fallowing belongs vnto claies, which by dʒought are made lose and light, and earely fallowings vnto mirt soiles, such as these which by ozmesse doe ingender and binde close together.

About the middest of June, you shall beginne to wæde your Corne, in such sozt as hath bæne before described in the fozmer Chapters: and although this soile naturally of it selfe (if it haue receiued his whole Ardor in due seasons, and haue bæne Ploughed cleane, accozding to the office of a good Husband) doth neither put fozth Thistle oz other wæde, yet if it want either the one oz the other, it is certaine that it puts them fozth in great abundance, foʒ by Thistles and wædes, vpon this soile, is euer knowne the goodnesse and dilligence of the Husbandman. Of weeding.

About the middest of July, you shall beginne to foile your land, in such sozt also as hath bæne mentioned in the fozmer Chapters, onely with this obseruation that if any of your lands lie flat, you shall then, in your foiling, plough those lands vpward and not dowmeward, holding your first precept that in this soile, your lands must lie high, light, and hollow, which if you see they doe, then you may if you please in your foiling cast them dowmeward, because at Winter ridging you may set them vp againe. Of Foiling.

Of Manuring. Now for as much as in this Chapter I haue hitherto omitted to speake of Manuring this soile, you shall vnderstand that it is not because I hold it so rich that it nedeth no Manure, but because I know there is nothing more needfull vnto it then Manure, in so much that I wish not the Husbandman of this ground to binde himselfe vnto any one particular season of the yeere for the leading forth of his Manure, but to bestow all his leasurable houres and rest from other workes onely vpon this labor, euen through the circuit of the whole yeere, knowing this most precisely, that at what time of the yeere so euer you shall lay Manure vpon this earth it will returne much profit.

As for the choise of Manures vpon this soile they are all those whatsoeuer, of which I haue formerly intreated in any of the other Chapters, no Manure whatsoeuer comming amisse to this ground: prouided that the Husbandman haue this respect to lay vpon his moystest and coldest ground his hottest Manures, and vpon his hottest and driest earth his colest and moistest Manures: the hot Manures being Sheepes-dung, Pigions-dung, Pullen-dung, Lyme, Ashes, and such like: the cole being Ore-dung, Horse-dung, the scowrings of Ponds, Marle, and such like.

Of Winter-ridging. About the middest of September you shall beginne to Winter-ridge your Land, which in all points you shall doe according as is mentioned in the former Chapters of the Clayes: for in this Arder there is neuer any difference, onely this one small obseruation, that you may aduenture to Winter-ridge this mixt earth sooner then any other: for many of our best English Husbandmen which liue vpon this soile doe hold this opinion, that if it be Winter-ridged so early in the yeere, that through the vertue of the latter spring it put forth a certaine greene weede like mosse, being short and soft, that the land is so much the better therefore, being as they imagine both fed and comforted by such a slender expression which doth not take from the land any part, but like a warme couering doth ripen and

make

make mellow the mould, and this cannot be effected but onely by early Winter-riging.

At the end of September you shall beginne to sow your Wheate, Rye, and Maslin, all which Graines are very naturall, good, and profitable vpon this soile, and are to be sowne after the same manner, and with the same obseruations which are specified in the former Chapter of the blacke clay, that is to say, the Wheate vnder furrow, and vnharrowed, the Rye and Maslin aboue furrow, and well harrowed. And herein is also to be remembred all those precepts mentioned in the Chapter of the blacke Clay, touching the diuision of the fields, that is to say, if you haue three fields, you shall then sow your Wheate, Rye and Maslin in your fallow-field, and so saue both the Foyling and double manuring of so much earth: but if you haue foure fields, then you shall sow those graines vpon that land from whence the same yeere you did reape your Pease; your Wheate hauing no other Manure then that which came by the Pease, your Rye hauing, if possible, eyther Manure from the Cart, or from the Folde, in such sort as hath beene shewed in the Chapter of the blacke Clay, and this of Husbandmen is called Inam-wheate or Inam-rye, that is, white corne sowne after white-corne, as Barley after Barley, or hard-corne after hard-corne, which is wheate after Pease. Of Sowing of Wheate, Rye, and Maslin.

Now for the Plough which is most proper for this soile it is to be made of a middle size betwixt that for the blacke Clay, and that for the red Sand, being not all out so bigge and vnwieldy as the first, nor so slender and nimble as the latter, but taking a middle proportion from them both, you shall make your Plough of a competent fitnesse. Of the plough.

As for the Irons, the Share must be of the same proportion that the Share for the red Sand is, yet a little thought bigger, and the Coulture of the fashion of that Coulture, onely not full so much bent, but all-out as sharpe and as long: and these Irons must be euer well maintained with steele, for this mixt earth is euer the hardest, and weareth Of the plough-Irons.

wearеth both the Plough and Irons soonest, and therefore it is agreed by all Husbandmen that this Plough must not at any time want his Plough-slip, except at the first going of the Plough you shall finde that it hath too much land, that is to say, by the crosse setting on of the beame, that it runneth too greedily into the land, which to helpe, you shall let your Plough goe without a plough-slip, till the plough-head be so much worne, that it take no more but an ordinary furrow, and then you shall set on your Plough-slips and Plough clouts also: but I write this in case there be imperfection in the Plough, which if it be otherwise, then this observation is needlesse.

Of the Teame. Now for the Teame or Draught which shall draw this Plough, they are as the former, Oxen or Horses, and their number the same that is prescribed for the blacke Clay, as namely, eight or five Beasts for Pease-earth, for Fallowing, and Summer-stirring, and five or foure for all other Ardors: for you must understand that this mirt and binding soile, through his hardnesse, and glutenous holding together, is as hard to plow as any clay-soile whatsoever, and in some speciall seasons more by many degrees.

Of the white clay with white Sand. Now for the white clay mirt with white sand, it is an earth much more barraine, then this former mirt earth, and bringeth forth nothing without much care, diligence, and good order: yet, for his manner of Earings, in their true natures every way doe differ nothing from the Earings of this blacke clay and red Sand, onely the Seeds which must be sowne upon this soile differeth from the former: for upon this soile in stead of Barley you must sow most Oates, as a Graine which will take much strength from little fertilitie: and in stead of Rye you shall sow more Wheate and more Pease, or in stead of Pease then you shall sow Fitches of eyther kinde which you please, and the increase will be (though not in abundance, yet) so sufficient as shall well quit the Plow-mans labour.

Of Manuring. Now for the Manuring of this ground, you shall understand that Marle is the chiefest: for neyther will any man

man suppose that this hard soile should bring vp cattell sufficient to manure it, nor if it would, yet that Manure were not so good: for a barraine clay being mixt with a most barraine sand, it must consequently follow that the soile must be of all the bareneſt, insomuch that to giue perfect strength and life vnto it, there is nothing better then Marle, which being a fat and strong clay, once incorporated within these weake moulds, it must needes giue them the best nourishment, loosening the binding substance, and binding that weakneſſe which occasioneth the barrainneſſe: but of this Marle I shall haue more occasion to speake hereafter in a particular Chapter, onely thus much I must let you vnderstand, that this soile, albe it be not within any degree of praise for the bringing forth of Corne, yet it is very apt and fruitfull for the breeding of graſſe, insomuch that it will beare you corne for at least nine yeares together (without the vse of any fallow or Tilth-field) if it be well marled, and immediately after it will beare you very good breeding graſſe, or else reasonable Medow for as many yeares after, as by daily experience we see in the Countries of Lancaster and Chester. So that the consequence being considered, this ground is not but to be held indifferent fruitfull: for whereas other soiles afore shewed (which beare abundance of Graine) are bound to be manured once in three yeares, this soile, albe it beare neither so rich graine, nor so much plenty, yet it needes marling not aboue once in fiftene or eightene yeares: and albe Marle be a Manure of the greateſt coſt, yet the profit by continuance is so equall that the labour is neuer spent without his reward, as shall more largely appeare hereafter.

As touching the Plough, it is the same which is mentioned in the other soile of the blacke Clay, and red Sand, altering nothing eyther in quantitie of timber, or strength of Irons: so that to make any large description thereof, is but to double my former discourses, and make my writings tedious. Of the Plough.

For to conclude briefely, these two soiles differ onely

in

but in fatnesse and strength of nature, not in Earing, or plowing, so that the labours of tillage being equall there is not any alteration more then the true diligence of much manuring, which will breede an affinitie or alyance betwixt both these soiles. And thus much for this blacke Clay and red Sand, or white Clay and white Sand.

THE

THE FIRST PART OF THE ENGLISH Husbandman:

Contayning, the manner of plowing and Manuring all ſorts of Soyles, together with the manner of planting and ſetting of Corne.

CHAP. I.

Of the manner of plowing all ſimple Earths, which are vncompounded.

THAT many famous and learned men, both in Fraunce, Spaine, Italy and Germany, haue ſpent all their beſt time in ſhewing vnto the world the excellencie of their experiences, in this onely renowned Arte of Huſbandry, their large and learned Volumes, moſt excellently written, in that kinde, are witneſſes: from whence we by tranſlations haue gotten ſome contentment, though but ſmall profit; becauſe thoſe forraine clymates, differing much

much from ours, both in nature of earth, and temper of Ayre, the rules and obseruations belonging vnto them can be little auailable to vs, more then to know what is done in such parts, a thing more appertaining to our conference then practise. But now, that other kingdomes may see though we write lesse yet we know as much as belongeth to the office of the English Husbandman, I, though the meanest of many millions, haue vndertaken to deliuer vnto the world all the true rudiments, obseruations and knowledges what soeuer, which hath any affinitie or alliance with English Husbandry. And for as much as the best and principallest part of Husbandry consisteth in the plowing and earring of the ground (for in that onely Adam began his first labours) I thinke it not vnmeete, first to treate of that subiect, proceeding so from braunch to braunch, till I haue giuen euery one sufficient knowledge.

To speake then first of the Tilling of Grounds. You shall well vnderstand, that it is the office of euery good Husbandman before he put his plough into the earth, truly to consider the nature of his Grounds, and which is of which quallitie and temper. To proceede then to our purpose; all soyles what soeuer, in this our kingdome of England, are reduced into two kindes onely, that is to say, Simple or Compound. Simple, are those which haue no mixture with others of a contrary quallitie, as are your stiffe clayes, or your lose sands: your stiffe clayes are likewise diuers, as a blacke clay, a blew clay, and a clay like vnto Marble. Your sands are also diuers, as a red sand, a white sand, a yellow sand, and a sand like vnto dust. Your mixt earths are where any of these clayes and sands are equally or vnindifferently mixed together, as shalbe at large declared hereafter. Now as touching the tilling of your simple clayes, it is to be noted, that the blacke clay, of all earth, is the most fruitfull, and demandeth from the Husbandman the least toyle, yet bringeth forth his increase in the greatest abundance: it will well and sufficiently

ently bring forth three crops, eare it desire rest: namely, the first of Barly, the second of Pease, and the third of Wheate: It doth not desire much Manure, for it is naturally of it selfe so fat, rich, and fruitfull, that if you adde strength vnto his strength, by heaping Manure or Compasse thereupon, you make it either blast, and mildew the Corne that growes, with the too much fatnesse of the earth, or else through his extreame rankenesse, to bring it vp in such abundance that it is not able to stand vpright when it is shot vp, but falling downe flat to the ground, and the eares of Corne smothering one another, they bring forth nothing but light Corne, like an emptie huske, without a kirnell. The best Manure or Compasse therefore that you can giue such ground, is then to plow it in orderly and dew seasons, as thus: you shall begin to fallow, or breake vp this soyle, at the beginning of May, at which time you shall plow it deepe, & take vp a large furrow, and if your Lands lye any thing flat, it shalbe meete that you begin on the ridge of the land, and turne all your furrowes vpward, but if your Lands lye high and vpright, then shall you begin in the furrow and turne all your furrowes downeward, which is called of Husbandmen, the casting downe of Land. This first plowing of ground, or as Husbandmen tearme it, the first ardor, is called fallowing: the second ardor, which we call stirring of ground, or sommer stirring, you shall begin in July, which is of great consequence, for by meanes of it you shall kill all manner of weedes and thistells that would annoy your Land. In this ardor you must oft obserue that if when you fallowed you did set vp your Land, then now when you stirre you must cast downe your Land, and so contrarily, if before you did cast downe, then now you must set vp: your third ardor, which is called of Husbandmen, winter ridgeing, or setting vp Land for the whole yeere, you shall begin at the latter end of September, and you must euer obserue that in this third ardor you doe alwaies ridge vp your Land, that is to say, you most turne euery furrow vpward and

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lay them as close together as may be, for should you doe otherwise, that is to say, either lay them flat or lowsely, the winter season would so beat and bake them together, that when you should sow your seede you would hardly get your plough into the ground.

Now your fourth and last ardor, which must be when you sow your seede, you shall begin euer about the midst of March, at least one weeke before our Ladies day, commonly called the Annunciation of Mary, and this ardor you shall euer plow downeward, laying your ridges very well open, and you shall euer obserue in this ardor, first to sow your seede, and then after to plow your ground, turning your seede into the earth, which is called of Husbandmen sowing vnderfurrow: as sone as your ground is plowed you shall harrow it with an harrow whose teeth are all of wood, for these simple earths are of easie temper and will of themselues fall to dust, then after you haue thus sowne your ground, if then there remaine any clots or lumpes of earth vnbroken, you shall let them rest till after the next shower of raine, at which time you shall either with a heauie rouler, or the backside of your harrowes, runne ouer your Lands, which is called the sleighting of ground, and it will not only breake such clots to dust, but also lay your Land plaine and smoth, leauing no impediment to hinder the Corne from sprouting and comming forth. In this same ordor as you are appointed for this blacke clay, in this same manner you shall ordor both your blew clay & your clay which is like vnto marble. Now as touching the plough which is fittest for these clayes, it must be large and strong, the beame long and well bending, the head thicke and large, the sheeth broad, strong, and well sloaping, the share with a very large wing, craueing much earth, and the coulter long, thicke and very straight.

Now touching those lands which are simple and vncompounded, you shall vnderstand that euery good Husbandman must begin his first ardor (which is to fallow them) at the beginning of January, he must sower either them,

them, which is the second ardor, at the latter end of Aprill, he shall cast them downe againe, which is called foyling of Land, at the beginning of July, which is the third ardor, and wherein is to be noted, that how soeuer all other ardors are plowed, yet this must euer be cast downward: the fourth ardor, which is winter-stirring or winter-ridging, must euer begin at the end of September, and the fift and last ardor must be performed when you sow your ground, which would be at the middest of May, at the soonest, and if your leasure and abilitie will giue you leaue, if you turne ouer your ground againe in January, it will be much better, for these sands can neuer haue too much plowing, nor too much Manure, and therefore for them both, you shall apply them so oft as your leasure will conuenently serue, making no spare when either the way or opportunitie will giue you leaue. Now for as much as all sands, being of a hot nature, are the fittest to bring forth Rye, which is a graine delighting in dryneste onely, you shall vnderstand, that then you shall not need to plow your ground aboue foure times ouer, that is, you shall fallow, sommer stirre, foyle, and in September sow your Corne: and as these ardors serue the red sand, so are they sufficient for your white sand, and your yealow sand also. As touching the ploughes fit for these light earths, they would be little and strong, hauing a short slender beame and a crooked; a narrow and thinne head, a slender sheeth, a share without a wing, a coulter thinne and very crooked, and a paire of hales much bending forward towards the man; and with this manner of plough you may plow diuers mixt and compounded earths, as the blacke clay and red sand, or the red sand and white grauell: and thus much as touching earths that are simple and vncompounded.

Chap. II.

Of the manner of plowing the blacke clay mixt with white sand, and the white clay mixt with red sand: their Earrings, Plough, and Implements.



So touching the mixture of these two seuerall soyles, that is to say, the blacke clay with white sand, and the white clay with red sand, they differ not in the nature of plowing, sowing, or in Manuring, from the soyle which is mixt of a blacke clay and red sand, of which I haue sufficiently intreated before: onely thus much you shall vnderstand, that the blacke clay mixt with white sand is so much better and richer then the white clay mixt with red sand, by as much as the blacke clay is better then the white clay: and although some Husbandmen in our Land, hould them to be both of one temper and goodnesse, reasoning thus, that by how much the blacke clay is better then the white, by so much the red sand is better then the white sand, so that what the mixture of the one addeth, the mixture of the other taketh away, and so maketh them all one in fruitfulnesse and goodnesse: but in our common experience it doth not so fall out, for we finde that the blacke clay mixt with white sand, if it be ordered in the forme of good Husbandry, that is to say, be plowed ouer at least foure times, before it come to be sowne, and that it be Manured and compassed in Husbandly fashion, which is to allow at least eight waine-load to an Aker, that if then vpon such Land you shall sow either Organe Wheat (in the south parts called red Wheat) or flaren, or white Pollard Wheat, that such Wheat will often mildew, and turne as blacke as soote, which onely sheweth too much richnesse and fatnesse in the earth, which the white clay mixt with red sand hath neuer beene seene to doe, especially so long as it is vsed in any

Husbandly

husbandly fashion, neither will the white clay mixt with red sand indure to be deuided into foure fields, that is to say, to beare three seuerall crops, one after another, as namely, Barly, Pease, and Wheat, without rest, which the blacke clay mixt with white sand many times doth, and thereby againe showeth his better fruitfulnesse: neuertheless, in generalitie I would not wish any good Husbandman, and especially such as haue much tillage, to deuide either of these soyles into any more then three fields, both because hee shall ease himselfe and his Cattell of much toyle, shall not at any time lose the best seasons for his best workes, and make his commodities, and fruit of his hands labours, by many degrees more certaine.

You shall also vnderstand, that both these soyles are very much binding, especially the white clay with red sand, both because the clay, proceeding from a chaulkie and limie substance, and not hauing in it much fatnesse or fertilitie (which occasioneth seperation) being mixt with the red sand, which is of a much more hardnesse and aptnesse to knit together, with such tough matter, it must necessarilie binde and cleaue together, and so likewise the blacke clay, from whence most naturally proceedeth your best limestone, being mixt with white sand, doth also binde together and stifle the seede, if it be not preuented by good Husbandry.

You shall therefore in the plowing and earring of these two soyles, obserue two especiall notes; the first, that by no meanes you plow it in the wet, that is, in any great glut of raine: for if you either lay it vp, or cast it downe, when it is more like morter then earth, if then any sunshine, or faire weather, doe immediately follow vpon it, it will so drie and bake it, that if it be sowne, neither will the seede haue strength to sprout thorow it, nor being in any of your other summer ardors, shall you by any meanes make your plough enter into it againe, when the season falleth for other plowing. The second, that you haue great care you lay your Land high and round, that the furrowes,

rowes, as it were standing vpright one by another, or lying light and hollow, one vpon another, you may with more ease, at any time, enter in your plough, and turne your moulde which way you please, either in the heate of Sommer, or any other time of the yeare whatsoeuer.

Now as touching the plough, which is most best and proper for these soyles, it would be the same in fise which is formerly directed for the red sand, onely the Irons must be altered, for the Coulter would be more long, sharpe, and bending, and the share so narrow, sharpe, and small as can conuenently be made, according as is formerly expressed, that not hauing power to take vp any broad furrow, the furrowes by reason of there slendernesse may lye many, and those many both hollow, light and at any time easily to be broken.

As for the Teame which is best to worke in this soyle, they may be either Horses or Oxen, or Oxen and Horse mixt together, according to the Husbandmans abilitie, but if hee be a Lord of his owne pleasure and may commaund, and haue euery thing with is most apt and proper, then in these two soyles, I preferre the Teame of Horses single, rather then Oxen, especially in any winter or moist ardor, because they doe not tread and foyle the ground making it miric and durtie as the Oxe doth, but going all in one furrow, doe keepe the Land in his constant firmenesse.

As touching the clotting, sleighting, weeding, and dressing of these two soyles, they differ in nothing from the former mixt earths, but desire all one manner of dilligence: and thus much for these two soyles the blacke clay mixt with white sand, and the white clay with white red sand.

A compariſon

Chap. III.

A compariſon of all the former ſoyles together, and moſt eſpeciall notes for giuing the ignorant Husbandman perfect vnderſtanding, of what is written before.



The reaſon why I haue thus at large diſcourſed of euery ſeuerall ſoyle, both ſimple and compounded, is to ſhow vnto the induſtrious Huſbandman, the perfect and true reaſon of the generall alteration of our wo2kes in Huſband2y, th2ough this our Realme of England: fo2 if all our Land, as it is one kingdome, were likewiſe of one compoſition, mixture, and goodneſſe, it were then exceeding p2epoſterous to ſee thoſe diuerſities, alterations, I, and euen contrary manners of p2oceedings in Huſband2y, which are daily and hourely vſed: but euery man in his owne wo2ke knowes the alteration of clymates. Yet fo2 ſo much as this labour of Huſband2y, conſiſteth not fo2 the moſt part in the knowing and vnderſtanding b2eaſt, but in the rude, ſimple, and ignoza2nt Clowne, who onely knoweth how to doe his labour, but cannot giue a reaſon why he doth ſuch labour, mo2e then the inſtruction of his parents, o2 the cuſtome of the Countrie, where it comes to paſſe (and I haue many times ſeene the ſame to mine admiration) that the ſkilfulleſt Clowne which is b2ed in the clay ſoyles, when he2 hath beene b2ought to the ſandy ground, he2 could neither hould the plough, temper the plough, no2 tell which way in good o2der to d2iue the Cattell, the heauineſſe of the one labour being ſo contrary to the lightneſſe of the other, that not hauing a temperance, o2 vnderſtanding in his hands, he2 hath beene put euen vnto his wittes ends; therefo2e I thinke it conuenient, in this place, by a ſlight compariſon of ſoyles together, to giue the ſimpleſt Huſbandman ſuch direct & plaine rules that he

shall with out the study of his braines, attaine to absolute knowledge of euery seuerall mixture of earth: and albeit hee shall not be able distinctly to say at the first that it is compounded of such and such earths, yet hee shall be very able to deliuer the true reason and manner how such ground (of what nature soeuer) shall be Husbanded and tilled.

Therefore to begin the Husbandman, is to vnderstand, that generally there are but two soyles for him to regard, for in them consisteth the whole Arte of Husbandry: as namely, the open and lose earth, and the close and fast binding earth, and these two soyles being meare opposites and contraries, most necessarily require in the Husbandman a double vnderstanding, for there is no soyle, of what simplicitie or mixture soeuer it be, but it is either lose or fast.

Now to giue you my meaning of these two words, loose and fast, it is, that euery soyle which vpon parching and dry weather, euen when the Sunne beames scorcheth, and as it were baketh the earth, if then the ground vpon such exceeding drought doe moulder and fall to dust, so that whereas before when it did retaine moisture it was heauie, tough, and not to be seperated, now hauing lost that glewinesse it is light, lose, and euen with a mans foote to be spurnd to ashes, all such grounds are tearmed lose and open grounds, because at no time they doe binde in or imprison the seede (the frost time onely excepted, which is by accidence, and not from the nature of the soyle:) and all such grounds as in their moisture or after the fall of any sodaine raine are soft, plyable, light, and easie to be wrought, but after when they come to lose that moistnesse and that the powerfulnesse of the Sunne hath as it were dryd vp their veynes, if then such earths become hard, firme, and not to be seperated, then are those soyles tearmed fast and binding soyles, for if there ardors be not taken in their due times, and their seede cast into them in perfect and due seasons, neither is it possible for

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the Plowman to plow them, nor for the sæde to sprout through, the earth being so fastned and as it were stone-like first together. Now sithence that all soyles are drawne into these two heads, fastnes, and lowsenesse, and to them is annexed the diuersitie of all tillage, I will now show the simple Husbandman which earths be lowse, and which fast, and how without curiositie to know and to distinguish them.

Briefely, all soyles that are simple and of themselues vncompounded, as namely, all claies, as blacke, white, gray, or blew, and all sands, as either red, white, or blacke, are open and lowse soyles: the claies because the body and substance of them being held together by moistnes, that moisture being dryed vp, their strength and stifnesse decayeth, and sands by reason of their naturall lightnesse, which wanting a more moist and fit body to be ioyned with them doe lose all strength of binding or holding together. Now all mixt or compound earths (except the compositions of one and the same kinds, as clay with clay, or sand with sand) are euer fast and binding earths: for betwixt sand and clay, or clay & grauell, is such an affinitie, that when they be mixt together the sand doth giue to the clay such hardnesse and dryncsse, and the clay to the sand such moisture and coldnesse, that being fit together they make one hard body, which through the warmth of the Sunne bindeth and cleaueth together. But if it be so that the ignorance of the Husbandman cannot either through the subtiltie of his eye sight, or the obseruations gathered from his experience, distinguish of these soyles, and the rather, sith many soyles are so indifferently mixt, and the colour so very perfect, that euen skill it selfe may be deceiued: as first to speake of what mixture some soyles consist, yet for as much as it is sufficient for the Husbandman to know which is lowse and which is binding, hee shall onely when he is perplext with these differences, vse this experiment, hee shall take a good lumpe of that earth whose temperature hee would know, and working it with

water and his wet hands, like a peece of past, he shall then as it were make a cake thereof, and laying it before an hot fire, there let it lye, till all the moisture be dried & backt out of it, then taking it into your hands and breaking it in peeces, if betweene your fingers it moulder and fall into a small dust, then be assured it is a lose, simple, and vncompounded earth, but if it breake hard and firme, like a stone, and when you crumble it betweene your fingers it be rough, grattie, and shining, then be assured it is a compounded fast-binding earth, and is compounded of clay and sand, and if in the baking it doe turne red or redish, it is compounded of a gray clay and red sand, but if it be browne or blewish, then it is a blacke clay & white sand, but if when you breake it you finde therein many small pibles, then the mixture is clay and grauell. Now there be some mixt soyles, after they are thus bak't, although they be hard and binding, yet they will not be so exceeding hard and stone-like as other soyles will be, and that is where the mixture is vnequall, as where the clay is more then the sand, or the sand more then the clay.

When you haue by this experiment found out the nature of your earth, and can tell whether it be simple or compounded, you shall then looke to the fruitfulnesse thereof, which generally you shall thus distinguish. First, that clayes, simple and of themselues vncompounded, are of all the most fruitfull, of which, blacke is the best, that next to clayes, your mixt earths are most fertill, and the mixture of the blacke clay and red sand, called a hasell earth, is the best, and that your sands are of all soyles most barraine, of which the red sand for profit hath euer the preheminence.

Now for the generall tillage and vse of these grounds, you shall vnderstand that the simple and vncompounded grounds, being lose and open (if they lye free from the danger of water) the Lands may be layd the flattest and greatest, the furrowes turned vp the largest and closest, and the plough and plough-Irons, most large and massie, onely

onely those for the sandy grounds must be more slender then those for the clayes and much more nimble, as hath, beene showed before. Now for the mixt earths, you shall lay your Lands high, round, and little, set your furrowes vpright, open, and so small as is possible, and make your plough and plow Irons most nimble and slender, according to the manner before specified: and thus I conclude, that hee which knoweth the lose earth and the binding earth, can either helpe or abate the strength of the earth, as is needfull, and knowes how to sorte his ploughes to each temper, knowes the ground and substance of all tillage.

Chap. IIII.

Of the planting or setting of Corne, and the profit thereof.



Not that I am conceited, or carried away with any nouelty or strange practise, vnusually practised in this kingdome, or that I will ascribe vnto my selfe to giue any iudiciall approbation or allowance to things meerely vnfrequented, doe I publish, within my booke, this relation of the setting of Corne, but onely because I would not haue our English Husbandman to be ignorant of any skill or obscure faculty which is either proper to his profession, or agreeable with the fertillitie and nature of our clymates, and the rather, since some few yeeres agoe, this (as it then appeared secret) being with much admiration bruted through the kingdome, in so much that according to our weake accustomed dispositions (which euer loues strange things best) it was held so worthy, both for generall profit and particular ease, that very few (except the discreet) but did not alone put it in practise, but did euen ground strong beleifes to raise to themselues great common-wealthes by the

profits thereof; some not onely holding insufficient arguments, in great places, of the inutilitie of the plough, but euen vtterly contemning the poore cart Iade, as a creature of no necessitie, so that Poulters and Carriers, were in good hope to buy Horse-flesh as they bought egges, at least fiue for a penie; but it hath proued otherwise, and the Husbandmanes yet cannot lose the Horses seruice. But to proceede to the manner of setting or planting of Corne, it is in this manner.

Of setting Wheate.

Hauing chosen out an aker of good Corne ground, you shall at the beginning of March, appoint at least fiue diggers or labourers with spades to digge vp the earth gardenwise, at least a foote and three inches deepe (which is a large spades graft) and being so digged vp, to rest till June, and then to digge it ouer againe, and in the digging to trench it and Manure it, as for a garden mould, bestowing at least fortæne Waine-load of Horse or Ore Manure vpon the aker, and the Manure to be well couered within the earth, then so to let it rest vntill the beginning of October, which being the time for the setting, you shall then digge it vp the third time, and with rakes and beetells breake the moulde somewhat small, then shall you take a board of fiue foot square, which shalbe bored full of large wimble holes, each hole standing in good order, iust fiue inches one from another, then laying the board vpon the new digged ground, you shall with a stick, made for the purpose, through euery hole in the board, make a hole into the ground, at least foure inches deepe, and then into euery such hole you shall drop a Corne of Wheate, and so remouing the board from place to place, goe all ouer the ground that you haue digged, and so set each seuerall Corne fiue inches one from another, and then with a rake you shall rake ouer and couer all the holes with earth, in such sort that they may not be discerned. And herein you are to obserue by the way that a quarte of Wheate will set your aker: which Wheate is not to be taken as it falles out by chance when you buy it

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in the market, but especially culd and pickt out of the eare, being neither the vppermoſt Cornes which grow in the toppes of the eares, nor the loweſt, which grow at the ſetting on of the ſtalke, both which, moſt commonly are light and of ſmall ſubſtance, but thoſe which are in the midſt, and are the greateſt, fulleſt, and roundeſt.

Of ſetting Barly, or Peaſe.

Now in the ſelfe-ſame ſort as you dreſſe your ground for your Wheate, in the ſelfe ſame manner you ſhall dreſſe your ground for Barly, onely the firſt time you digge it ſhalbe after the beginning of May, the ſecond time and the Manuring about the midſt of October, wherein you ſhall note that to your aker of Barly earth, you ſhall allow at leaſt foure and twentie Waine-load of Manure, and the laſt time of your digging and ſetting ſhalbe at the beginning of Aprill.

Now for the dreſſing of your earth for the ſetting of Peaſe, it is in all things anſwerable to that for Barly, onely you may ſaue the one halfe of your Manure, becauſe a doſen Waine-load is ſufficient, and the time for ſetting them, or any other pulſe, is euer about the midſt of February.

Of the profit of ſetting Corne.

Now for the profit which iſſueth from this practiſe of ſetting of Corne, I muſt needs confeſſe, if I ſhall ſpeake ſimply of the thing, that is, how many foulds it doubleth and increaſeth, ſurely it is both great and wonderfull: and whereas ingenerall it is reputed that an aker of ſet Corne yeeldeth as much profit as nine akers of ſowne Corne, for mine owne part I haue ſeene a much greater increaſe, if euery Corne ſet in an aker ſhould bring forth ſo much as I haue ſeene to proceede from ſome three or foure Cornes ſet in a garden, but I feare me the generalitie will neuer hould with the particular: how euer, it is moſt certaine that earth in this ſort trimmed and inriched, and Corne in this ſort ſet and preſerued, yeeldeth at leaſt twelue-fold more commoditie then that which by mans hand is confuſedly throwne into the ground from the Hopper: whence it hath come to paſſe that thoſe which

which by a few Cornes in their gardens thus, set seeing the innumerable increase, haue concluded a publique profit to arise thereby to the whole kingdome, not loking to the intricacie, trouble, and casualtie, which attends it, being such and so insupportable that almost no Husbandman is able to vndergoe it: to which we need no better testimony then the example of those which hauing out of meare couetousnesse and lucre of gaine, followed it with all greedinesse, seeing the mischiefes and inconueniences which hath incountred their workes, haue euen desisted, and forgotten that euer there was any such practise, and yet for mine owne part I will not so vtterly condemne it, that I will depriue it of all vse, but rather leaue it to the discretion of iudgement, and for my selfe, onely hould this opinion, that though it may very wel be spared from the generall vse of Wheat and Barly in this kingdome, yet for haltie-Peafe, French Beanes, and such like pulse, it is of necessary implyment, both in rich and poore mens gardens. And thus much for the setting of Corne.

Chap. V.

Of the choice of seede-Corne, and which is best for which soyle.

HAuing thus showed vnto you the seuerall soyles and temperatures of our English land, together with the order of Manuring, dressing and tillage of the same, I thinke it meete (although I haue in generall writ something already touching the seede belonging to euery seuerall earth) now to proceede to a particular election and choice of seede-Corne, in which there is great care and diligence to be vsed: for as in Men, Beasts, Fowle, & euery mouing thing, there is great care taken for the choice of the breeders, because the creatures bred doe so much participate of the parents that for the most part

part they are ſæne not onely to carry away their outward figures and ſemblances, but euen their naturall conditions and inclinations, good iſſuing from good, and euill from euill: ſo in the choiſe of ſæde-Corne, if their be any neglect or careleſſeneſſe, the crop iſſuing of ſuch corrupt ſæde muſt of force bring forth a more corrupt harueſt, by as much as it exceedeth in the multiplication.

The choiſe of ſeede Wheate.

To proceede therefore to the choiſe of ſæde-Corne, I will begin with Wheate, of which there are diuers kindes, as your whole ſtraw Wheate, the great browne Pollard, the white Pollard, the Organe or red Wheate, the ſtaren Wheate, and the chilter Wheate. Your whole ſtraw Wheate, and browne Pollard, are knowne, the firſt, by his ſtraw, which is full of pith, and hath in it no hollowneſſe (whence it comes that Husbandmen eſteeme it ſo much for their thacking, allowing it to be as good and durable as reede:) the latter is knowne by his eare, which is great, white, and ſmooth, without anes or beard vpon it: in the hand they are both much like one to another, being of all Wheates the biggeſt, roundeſt and fulleſt: they be ſomewhat of a high colour, and haue vpon them a very thicke huſke, which making the meale ſomewhat browne cauſeth the Baker not all together to eſteeme them for his pureſt manchet, yet the yeeld of flower which commeth from them is as great and greater then any other Wheate whatſoeuer. Theſe two ſortes of Wheate are to be ſowne vpon the fallow field, as crauing the greateſt ſtrength and fatneſſe of ground, whence it comes that they are moſt commonly ſæne to grow vpon the richeſt and ſtiffeſt blacke clayes, being a graine of that ſtrength that they will ſeldome or neuer mildew or turne blacke, as the other ſortes of Wheate will doe, if the ſtrength of the ground be not abated before they be throwne into the earth. Now for the choiſe of theſe two Wheates, if you be compelled to buy them in the market, you muſt regard that you buy that which is the cleaneſt and faireſt, being vtterly without any weedes, as darnell, cockell, tares or

any other foulnesse whatsoeuer: you shall looke that the Wheate, as neare as may be, hould all of one bignesse and all of one colour, for to beholde it contrary, that is to say, to see some great Cornes, some little, some high coloured, some pale, so that in their mixture they resemble changeable taffata, is an apparant signe that the Corne is not of one kinde but mixt or blended, as being partly whole-straw, partly Pollard, partly Organe, and partly Chelter. For the flaxen, it is naturally so white that it cannot be mixt but it may easily be discerned, and these mixt seedes are neuer good, either for the ground or the vse of man. Againe you shall carefully looke that neither this kinde of Wheate, nor any other that you buy for seede be blacke at the ends, for that is a signe that the graine comming from too rich a soyle was mildewed, and then it will neuer be fruitfull or proue good seede, as also you shall take care that it be not too white at the ends, showing the Corne to be as it were of two colours, for that is a signe that the Wheate was washt and dried againe, which vtterly confoundeth the strength of the Corne and takes from it all abilitie of bringing forth any great encrease. Now if it be so that you haue a crop of Wheate of your owne, so that you haue no need of the market, you shall then picke out of your choisest sheafes, and vpon a cleane floare gently bat them with a flaile, and not thresh them cleane, for that Corne which is greatest, fullest, and ripest, will first flie out of the eare, and when you haue so batted a competent quantitie you shall then winnow it and dresse it cleane, both by the helpe of a strong winde and open stues, and so make it fit for your seede.

I haue seene some Husbands (and truely I haue accounted them both good and carefull) that haue before Wheate seede time both themselues, wiues, children, and seruants at times of best leasure, out of a great Wheate mow or bay, to gleane or pull out of the sheafes, eare by eare, the most principall eares, and knitting them vp in small bundells to bat them and make their seede thereof,

and

and queſtionleſſe it is the beſt ſæde of all other: for you ſhall be ſure that therein can be nothing but the cleaneſt and the beſt of the Corne, without any weæds or foulneſſe, which can hardly be when a man threſheth the whole ſheafe, and although ſome men may thinke that this labour is great and troubleſome, eſpecially ſuch as ſowe great quantities of Wheate, yet let them thus farre encourage themſelues, that if they doe the firſt yære but gleane a buſhell or two (which is nothing amongſt a few perſons) and ſowe it vp on good Land, the encreaſe of it will the nert yære goe farre in the ſowing the whole crop: for when I doe ſpeake of this picking of Wheate, care by eare, I doe not intend the picking of many quarters, but of ſo much as the increaſe thereof may amount to ſome quarter.

Now there is alſo another regarde to be had (as auailable as any of the former) in chuſing of your ſæde Wheate, and that is to reſpect the ſoyle from whence you take your ſæde, and the ſoyle into which you put it, as thus.

If the ground whereon you meane to ſowe your Wheat be a rich, blacke, clay, ſtiffe and full of fertilitie, you ſhall then (as neare as you can) chuſe your ſæde from the barraineſt mixt earth you can finde (ſo the Wheate be whole-ſtraw or Pollard) as from a clay and grauell, or a clay and white ſand, that your ſæde comming from a much more barraine earth then that wherein you put it, the ſtrength may be as it were redoubled, and the encreaſe conſequently amount to a higher quantitie, as we finde it proueth in our daylie experience; but if theſe barraine ſoyles doe not affoorde you ſæde to your contentment, it ſhall not then be amiſſe (you ſowing your Wheate vpon fallow or tilth ground) if you take your ſæde-Wheate either from an earth of like nature to your owne, or from any mixt earth, ſo that ſuch ſæde come from the manis, that is, that it hath bæne ſowne after Peaſe, as being the third crop of the Land, and not from the fallow or tilth

ground, for it is a maxiome amongst the best Husbands (though somewhat preposterous to common sence) bring to your rich ground seede from the barraine, and to the barraine seede from the rich, their reason (taken from their experience) being this, that the seede (as before I said) which prospereth vpon a leane ground being put into a rich, doth out of that superfluitie of warmth, strength and fatnesse, double his increase; and the seede which commeth from the fat ground being put into the leane, having all the vigour, fulnesse and iuyce of fertilnes, doth not onely defend it selfe against the hungrinesse of the ground but brings forth increase contrary to expectation; whence proceedeth this generall custome of good Husbands in this Land, that those which dwell in the barraine woode Lands, heathes and high mountaine countries of this kingdome, euer (as neere as they can) seeke out their seede in the fruitfull low vales, and very gardens of the earth, & so likewise those in the vales take some helpes also from the mountaines.

Now for your other sortes of Wheate, that is to say, the white Pollard and the Organe, they are graines nothing so great, full, and large, as the whole straw, or browne Pollard, but small, bright, and very thinly huskt: your Organe is very red, your Pollard somewhat pale: these two sorts of Wheate are best to be sowne vpon the or fourth field, that is to say, after your Pease, for they can by no meanes endure an ouer rich ground, as being tender and apt to sprout with small moisture, but to mildew and choake with too much fatnesse, the soyles most apt for them are mixt earths, especially the blacke clay and red sand, or white clay and red sand, for as touching other mixtures of grounds, they are for the most part so barraine, that they will but hardly bring forth Wheate vpon their fallow field, and then much worse vpon a fourth field. Now for any other particular choise of these two seedes, they are the same which I shewed in the whole straw, and great Pollard. As for the flaren

Wheate,

Wheate, and thilter Wheate, the first, is a very white Wheate both inward and outward, the other a pale red or deepe yellow: they are the least of all sorts of Wheate, yet of much more hardnes and toughnesse in sprouting, then either the Organe or white Pollard, and therefore desire somewhat a more richer soyle, and to that end they are for the most part sowne vpon fallow fields, in mixt earths, of what natures or barrainenesse soeuer, as is to be seene most generally ouer all the South parts of this Realme: and although vncompounded sands out of their owne natures, doe hardly bring forth any Wheate, yet vpon some of the best sands and vpon the flintie grauels, I haue seene these two Wheates grow in good abundance, but being seldome it is not so much to be respected.

After your Wheate you shall make choise of your Rie, of which there is not diuers kindes although it carrie diuers complections, as some blackish, browne, great, full and long as that which for the most part growes vpon the red sand, or red clay, which is three parts red sand mixt with blacke clay, and is the best Rie: the other a pale gray Rie, short, small, and hungry, as that which growes vpon the white sand, or white clay and white sand, and is the worst Rie. Now you shall vnderstand that your sand grounds are your onely naturall grounds for Rie, as being indeede not principally apt for any other graine, therefore when you chuse your Rie for seede, you shall chuse that which is browneſt, full, round, and longest, you shall haue great care that it be free from weedes or filth, sith your sand grounds, out of their owne naturall heat, doth put forth such store of naughtie weeds, that except a man be extraordinarily carefull, both in the choise and dressing of his Rie, he may easily be deceiued and poyson his ground with those weedes, which with great difficultie are after rooted out againe. Now for your seedes to each soyle, it is euer best to sow your best sand-Rie vpon your best clay ground, and your best clay-Rie vpon your best sand ground, obser-

The choise of seede Rye.

uing euer this generall principle, not onely in Rie, but euen in Wheat, Barly, Pease and other graine of account, that is, euer once in three yeeres, to change all your seede, which you shall finde both to augment your encrease and to returne you double profit.

The choise of seede-Barly

Now for the choise of your seede-Barly, you shall vnderstand, that for as much as it is a graine of the greatest vse, & most tendernesse, therefore there is the greatest diligence to be vsed in the election thereof. Know then that of Barly there be diuers sorts, as namely, that which we call our common Barly, being long eares with two rankes of Corne, narrow, close, and vpright: another called spike or battledore-Barly, being a large eare with two rankes of Corne, broad, flat, and in fashion of a battledore: and the third called beane-Barly, or Barly big, being a large foure-square eare, like vnto an eare of Wheate.

Of these three Barleyes the first is most in vse, as being most apt and proper to euery soyle, whether it be fruitfull or barraine, in this our kingdome, but they haue all one shape, colour and forme, except the soyle alter them, onely the spike-Barly is most large and plentifull, the common Barly hardest and aptest to grow, and the beane-Barly least, palest, & tenderest, so that with vs it is more commonly seene in gardens then in fields, although in other Countries, as in Fraunce, Ireland, and such like, they sowe no other Barly at all, but with vs it is of no such generall estimation, and therefore I will neither giue it precedencie nor speake of it, otherwise then to referre it to the discreation of him who takes delight in many practises: but for the common Barly, or spike-Barly, which our experience findes to be excellent and of great vse, I will knit them in one, and write my full opinion of them, for their choise in our seede. You shall know then that when you goe into the market to chuse Barly for your seede, you shall to your best power elect that which is whitest, fullest, and roundest, being as the ploughman calles it, a full bunting Corne, like the nebbe or beake of a Bunting,

you

you shall obserue that it be all of one Corne, and not mingled, that is, clay Barly, and sand Barly together, which you shall distinguish by these differences: the clay Barly is of a palish, white, yellow colour; smoth, full, large, and round, and the sand Barly is of a deepe yellow, browne at the neather end, long, slender, and as it were, withered, and in generall no sand Barly is principall good for sede: but if the Barly be somewhat of a high colour, and browne at the neather end, yet notwithstanding is very full, bould, and bigge, then it is a signe that such Barly comes not from the sand, but rather from an ouer fat soyle, sith the fatnesse of the earth doth euer alter the complection of the Barly; for the whiter Barly euer the leaner soyle, and better sede: you shall also obserue, that there be not in it any light Corne, which is a kinde of hungry graine without substance, which although it filleth the seeds-mans hand, yet it deceiueth the ground, and this light Corne will commonly be amongst the best Barly: for where the ground is so rich that it bringeth forth the Barly too rankely, there the Corne, wanting power to stand vpon roote, falleth to the ground, and so robbe of kindly ripening, bringeth forth much light and insufficient graine. Next this, you shall take care that in your sede-Barly there be not any Oates, for although they be in this rase amongst Husbandmen accounted the best of wade, yet are they such a disgrace, that euery good Husband will most diligently eschew them, and for that cause onely will our most industrious Husbands bestow the tedious labour of gleaning their Barly, eare by eare, by which gleanings, in a yeare, or two, they will compasse their whole sede, which must infallibly be without either Oates or any wade whatsoeuer: and although some grounds, especially your richest blacke clayes, will out of the abundance of their fruitfulnesse (as not induring to be Idle) bring forth naturally a certaine kinde of wilde Oates, which makes some ignorant Husbands lesse carefull of their sede, as supposing that those wilde ones are a poisoning

to

to their graine, but they are infinetly deceiued: for such wilde Dates, whersoeuer they be, doe shake and fall away long before the Barly be ready, so that the Husbandman doth carry of them nothing into the Barne, but the straw onely. Next Dates, you must be carefull that there be in your Barly no other foule weede: for whatsoeuer you sow, you must looke for the increase of the like nature, and therefore as before I said in the Wheate, so in the Barly, I would wish euery good Husband to imploy some time in gleaning out of his Mow the principall eares of Barly, which being batted, dreſt, and sowne, by it selfe, albeit no great quantitie at the first, yet in time it may extend to make his whole seede perfect, and then hee shall finde his profit both in the market, where hee shall (for euery vse) sell with the dearest, and in his owne house where he shall finde his yeeld redoubled.

Now for fitting of seuerall seedes to seuerall soyles, you shall obserue, that the best seede-Barly for your clay field, is ninam Barly, sowne vpon the clay field, that is to say, Barly which is sowne where Barly last grew, or a second crop of Barly: for the ground hauing his pride abated in the first croppe, the second, though it be nothing neere so much in quantitie, yet that Corne which it doth bring forth is most pure, most white, most full, and the best of all seedes whatsoeuer, and as in case of this soyle, so in all other like soyles which doe hould that strength or fruitfulnesse in them that they are either able of themselues, or with some helpe of Manure in the latter end of the yeere, to bring forth two croppes of Barly, one after the other: but if either your soyle deny you this strength, or the distance of place bereaue you of the commoditie thereof, then you shall vnderstand that Barly from a hasell ground is the best seede, for the clay ground, and Barly from the clay ground is the best seede, not onely for the hasell earth, but euen for all mixt earths whatsoeuer, and the Barly which proceedes from the mixt earths is the best seede for all simple and vncompounded sands or grauells,

as

as wee finde, both by their increasings and dayly experience.

Now for the choise of seede-Beanes, Pease, or other Pulse, the scruple is nothing neere so great as of other seedes, because euery one that knowes any graine, can distinguish them when hee sees them: besides they are of that mallie waight, and so well able to indure the strength of the winde, that they are easie to be seuered from any weede or filth whatsoeuer: it resteth therefore that I onely giue you instruction how to imploy them. The choise of seede-Beanes, Pease, and Pulse.

You shall vnderstand therefore, that if your soyle be a stiffe, blacke, rich, clay, that then your best seede is cleane Beanes, or at the least three partes Beanes, and but one part Pease: if it be a gray, or white clay, then Beanes and Pease equally mixt together: if the best mixt earths, as a blacke clay and red sand, blacke clay and white sand, or white clay and red sand, then your seede must be cleane Pease onely: if it be white clay and white sand, blacke clay and blacke sand, then your seede must be Pease and Fitches mixt together: but if it be grauell or sand simple, or grauell and sand compounded, then your seede must be either cleane Fitches, cleane Bucke, or cleane Tares, or else Fitches, Bucke and Tares mixt together.

Now to conclude with the choise of your Oates. You shall vnderstand that there be diuers kindes of them, as namely, the great long white Oate, the great long blacke Oate, the cut Oate, and the skegge: the two first of these are knowne by their greatnesse and colours, for they are long, full, bigge, and smoth, and are fittest to be sowne vpon the best of barraine grounds, for sith Oates are the worst of graine, I will giue them no other priorities of place. The next of these, which is the cut Oate, it is of a pale yealow colour, short, smoth, and thicke, the increase of them is very great, and they are the fittest to be sowne vpon the worst of best grounds, for most commonly where you see them, you shall also see both good Wheate, good Barly, and good Beanes and Pease also. The choise of seede-Oates.

also. Now for the skegge Date, it is a little, small, hungry, leane Date, with a beard at the small end like a wilde Date, and is good for small vse more then Pullen onely: it is a seede meete for the barraineſt and worſt earth, as fit to grow but there where nothing of better profit will grow. And thus much for thoſe ſeedes which are apt and in vſe in our Engliſh ſoyles: wherein if any man imagine me guiltie of errour, in that I haue omitted particularly to ſpeake of the ſeede of blend-Corne, or Maſline, which is Wheate and Rye mixt together, I anſwere him, that ſith I haue ſhewed him how to chuſe both the beſt Wheate and the beſt Rye, it is an eaſie matter to mixe them according to his owne diſcretion.

Chap. VI.

Of the time of Harueſt and the gathering in of Corne.

NExt vnto plowing, it is neceſſary that I place Reaping, ſith it is the end, hope, and perfection of the labour, and both the merit and incouragement which maketh the toyle both light and portable: then to proceede vnto the time of Harueſt. You ſhall vnderſtand that it is requiſite for euery good Husband about the latter end of July, if the ſoyle wherein he liueth be of any hot temper, or about the beginning of Auguſt, if it be of temperate warmth, with all dilligence conſtantly to beholde his Rye, which of all graines is the firſt that ripeneth, and if he ſhall perceiue that the hull of the eare beginneth to open, and that the blacke toppes of the Corne doth appeare, he may then be aſſured that the Corne is fully ripe, and ready for the Sickle, ſo that inſtantly he ſhall prouide his Reapers, according to the quantitie of his graine: for if hee ſhall neglect his Rye but one day more then is fit, it is ſuch a haſty graine, that it will

ſhale

shale forth of the huske to the ground, to the great losse of the Husbandman. When hee hath prouided his shearers, which he shall be carefull to haue very good, he shall then looke that neither out of their wantonnesse nor emulation, they striue which shall goe fastest, or ridd most ground, for from thence proceedeth many errors in their worke, as namely, scattering, and leauing the Corne vncut behind them, the cutting the heads of the Corne off so that they are not possible to be gathered, and many such like incommodities, but let them goe soberly and constantly, and sheare the Rye at least fourteene inches aboue the ground. Then he must looke that the gatherers which follow the Reapers doe also gather cleane, & the binders binde the Sheafes fast from breaking, then if you finde that the bottomes of the Sheafes be full of greenes, or weedes, it shall not be amisse to let the Sheafes lye one from another for a day, that those greenes may wither, but if you feare any Raine or foule weather, which is the onely thing which maketh Rye shale, then you shall set it vp in Shockes, each Shocke containing at least seauen Sheafes, in this manner: first, you shall place foure Sheafes vpright close together, and the eares vpwards, then you shall take other three Sheafes and opening them and turning the eares downeward couer the other foure Sheafes that stode vpwards, and so let them stand, vntill you may with good conueniencie lead them home, which would be done without any protraction. Next after your cleane Rye, you shall in the selfe-same sort reape your blend-Corne, or Masline: and albeit your Wheate will not be fully so ripe as your Rye, yet you shall not stay your labour, being well assured that your Rye is ready, because Wheate will harden of it selfe after it is shorne, with lying onely. After you haue got in your Rye and blend-Corne, you shall then looke vnto your cleane Wheate, and taking heare and there an eare thereof, rubbe them in your hand, and if you finde that the Corne hath all perfection saue a little hardning onely, you shall

The getting in of Masline.

The getting in of Wheate.

then forthwith let your Reapers vnto it, who shall sheare it in all things as they did sheare your Rye, onely they shall not put it in Shockes for a day or more, but let the Sheafes lye single, that the winde and Sunne may both wither the greenes, and harden the Corne: which done, you shall put the Sheafes into great Shockes, that is to say, at least twelue or fourteene Sheafes in a Shocke, the one halfe standing close together with the eares vpward, the other halfe lying crosse ouerthwart those eares, and their eares downeward, and in this sort you shall let your Wheate stand for at least two dayes before you lead it.

Now it is a custome in many Countries of this kingdome, not to sheare their Wheate, but to mow it, but in my conceit and in generall experience, it is not so good: for it both maketh the Wheate foule, and full of weede, and filleth vp a great place with little commoditie, as for the vse of thacking, which is the onely reason of such disorderly cutting, there is neither the straw that is shorne, nor the stubble which is left behinde, but are both of sufficiencie inough for such an imployment, if it passe through the hands of a workman, as we see in dayly experience,

The getting in of Barly.

Next to your Wheate, you shall haue regard to your Barly, for it sodainely ripeneth, and must be cut downe assoone as you perceiue the straw is turned white, to the bottome, and the eares bended downe to the groundward. Your Barly you shall not sheare, although it is a fashion in some Country, both because it is painefull and profitlesse, but you shall Mowe it close to the ground, and although in generall it be the custome of our kingdome, after your Barly is mowen and hath lyne a day or two in swathe, then with rackes to rake it together, and make it into great cockes, and so to leade it to the Barne, yet I am of this opinion that if your Barly be good and cleane without thistles or weedes, that if then to euery sitheman, or Mower you alot two followers, that is to say, a gatherer

therer, who with a little short rake and a small hooke shall gather the Corne together, and a binder, who shall make bands and binde vp the Barly in smale Sheafes, that questionlesse you shall finde much more profit thereby: and although some thinke the labour troublesome and great, yet for mine owne part, I haue seene very great croppes inned in this manner, and haue seene two women, that with great ease, haue followed and bound after a most principall Mower, which made me vnderstand that the toyle was not so great as mine imagination; and the profit ten-fold greater then the labour: but if your Corne be ill Husbanded, and full of thistles, weedes, and all filthinesse, then this practise is to be spared, and the lose cocking vp of your Corne is much better. Assone as you haue cleansed any Land of Barly, you shall then immediatly cause one with a great long rake, of at least thirtie teeth, being in a sling bound bauticke-wise crosse his body, to draw it from one end of the Land to the other, all ouer the Land, that he may thereby gather vp all the lose Corne which is scattered, and carry it where your other Corne standeth, obseruing euer, as your cheifest rule, that by no meanes you neither leade Barly, nor any other graine whatsoeuer, when it is wet, no although it be but moistned with the dew onely: for the least dankishnesse, more then the sweate which it naturally taketh, will sone cause it to putrifie.

Now for the gathering in of your Oates, they be a graine of such incertaintie, ripening euer according to the weather, & not after any setled or naturall course, that you are to looke to no constant season, but to take them vpon the first show of ripenesse, and that with such diligence that you must rather take them before, then after they be ripe, because if they tarry but halfe a day too long, they will shed vpon the ground, & you shal lose your whole profit. The time then fittest to cut your Oates is, assone as they be somewhat more then halfe changed, but not altogether changed, that is, when they are more then two parts white, and yet the greene not vtterly

The getting in of Oates.

extinguished, the best cutting of them is to mow them (albeit I haue seene them shorne in some places) & being mowen to let them dry and ripen in the swathe, as naturally they will doe, and then if you bind them vp in Sheafes, as you should binde your Barly, it is best: for to carry them in the lose cocke, as many doe, is great losse and hindrance of profit.

The getting in of Pulse.

After you haue got in your white Corne, you shall then looke vnto your Pulse, as Beanes, Pease, Fitches, and such like, which you shall know to be ready by the blacknesse of the straw: for it is a rule, whensoeuer the straw turnes, the Pulse is ripe. If then it be cleane Beanes, or Beanes and Pease mixt, you shall mowe them, and being cleane Beanes rake them into heapes, and so make them vp into cockes, but if they be mixt you shall with hookes fould the Beanes into the Pease, and make little round reapes thereof, which after they haue beene turned and dryed, you may put twenty reapes together, and thereof make a cocke, and so lead them, and stacke them: but if they be cleane Pease, or Pease and Fitches, then you shall not mowe them, but with long hookes cut them from the ground, which is called Reaping, and so foulding them together into small reapes, as you did your Pease and Beanes, let them be turned and dryed, and so cocked, and carried either to the Barne, stacke, or houell.

Now hauing thus brought in, and finished your Haruest, you shall then immediately mowe vp the stubble, both of your Wheate, Rye, and Maslin, and with all expedition there-with thacke, and couer from Raine and weather, all such graine as for want of house-rome, you are compeld to lay abroad, either in stacke, or vpon houell: but if no such necessitie be, and that you haue not other more necessary imployment for your stubble, it shall be no part of ill Husbandry to let the stubble rot vpon the Land, which will be a reasonable Manuring or fatting of the earth.

Now hauing brought your Corne into the Barne, it is a lesson needlesse to giue any certaine rules how to spend

or

or vtter it forth, sith euery man must be ruled according to his affaires, and necessitie, yet sith in mine owne experience I haue taken certaine setled rules from those who haue made themselues great estates by a most formall and strict course in their Husbandry, I thinke it not amisse to show you what I haue noted from them, touching the vtterance and expence of their graine: first, for your expence in your house, it is méete that you haue euer so much of euery seuerall sort of graine thresht, as shall from time to time maintaine your family: then for that which you intend shall returne to particular profit, you shall from a fortnight before Michaelmas, till a fortnight after, thresh vp all such Wheate, Rye, & Maslin, as you intend to sell for séede, which must be winnowed, sand, and dresst so cleane as is possible, for at that time it will giue the greatest price; but as soone as séede-time is past, you shall then thresh no more of those graines till it be neare Midsummer, but begin to thresh vp all such Barly as you intend to conuert and make into Malt, and so from Michaelmas till Candlemas, apply nothing but Malting, for in that time graine is euer the cheapest, because euery Barne being full, some must sell for the payment of rents, some must sell to pay seruants wages, and some for their Christmas prouisions: in which time Corne abating and growing scarse, the price of necessitie must afterwards rise: at Candlemas you shall begin to thresh all those Pease which you intend to sell for séede, because the time being then, and euery man, out of necessitie, inforced to make his prouision, it cannot be but they must néedes passe at a good price and reckoning.

After Pease séede-time, you shall then thresh vp all that Barly which you meane to sell for séede, which euer is at the dearest reckoning of any graine whatsoeuer, especially if it be principally good and cleane. After your séede-Barly is sould, you may then thresh vp all such Wheate, Rye, and Maslin, as you intend to sell: for it euer giueth the greatest price from the latter end of May vntill the

beginning

beginning of September. In September you shall begin to sell your Malt, which being old and hauing lyne ripening the most part of the yeere, must now at the latter end of the yeere, when all old store is spent, and the new cannot be come to any perfection, be most deare, and of the greatest estimation: and thus being a man of substance in the world, and able to put euery thing to the best vse, you may by these vsuall obseruations, and the helpe of a better iudgement, imploy the fruits of your labours to the best profit, and sell euery thing at the highest price, except you take vpon you to giue day and sell vpon trust, which if you doe, you may then sell at what vnconscionable reckoning you will, which because such vnnaturall exactions neither agree with charitie, nor humanitie, I will forbeare to giue rules for the same, and referre euery man that is desirous of such knowledge, to the examples of the world, wherein he shall finde presidents inough for such euill customes. And thus much for the first part of this worke, which containeth the manner of Plowing and tillage onely.

THE

THE SECOND PART OF THE FIRST BOOKE OF the English Husbandman,

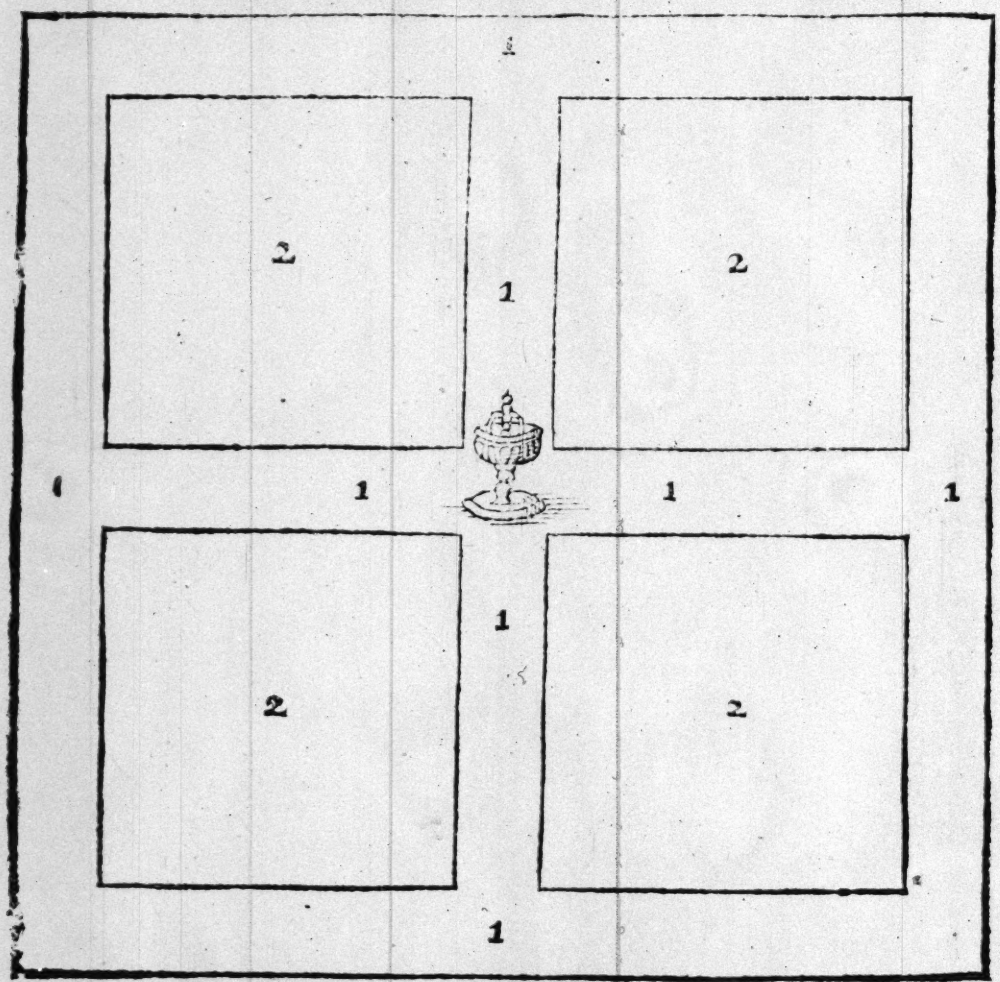
Contayning the Art of Planting, Grafting and Gardening, either for pleasure or profit; together with the vse and ordering *of Woodes.*

CHAP. I.

Of the Scyte, Modell, Squares, and Fashion of a perfect Orchard.

ALthough many authors which I haue read, both in Italian, French, and Dutch, doe make a diuersitie and distinguishment of Orchardes, as namely, one for profit, which they fashion rudely and without forme, the other for delight, which they make comely, decent, and with all good proportion, deuiding the quarters into squares, making the alleyes of a constant breadth, and planting the fruit trees in artificiall rowes: yet for as much as the comelinesse and well contriuing of the ground, doth nothing abate, but rather increase the commoditie, I will therefore ioyne them both together, and make them onely but one Orchard. Now for the scyte and placing of

this Orchard, I haue in the modell of my Country house, or Husbandmans Farme, shewed you where if it be possible it should stand, and both what Sunne & ayre it should lye open vpon: but if the scyte or ground-plot of your house will not giue you leaue to place your Orchard according to your wish, you shall then be content to make a vertue of necessitie, and plant it in such a place as is most conuenient, and nearest alyed to that forme before prescribed.



Now when you haue found out a perfect ground plot, you shall then cast it into a great large square, which you shall fence

fence in either with a stone or bricke wall, high, strong pale, or great ditch with a quicke-set hedge, but the wall is best and most durable, and that wall would haue vpon the inside within twelue or fourteene foote on of another, James or outshots of stone or bricke, betweene which you may plant and plash those fruit-trees which are of greatest tenderneſſe, the South and West Sunne hauing power to shine vpon them.

When you haue thus fenc'ſt in this great square, you shall then cast foure large alleyes, at least fourteene foote broad, from the wall round about, and so likewise two other alleyes of like breadth, directly crosse ouerthwart the ground-plot, which will deuide the great square into foure lesser squares, according to the figure before set downe.

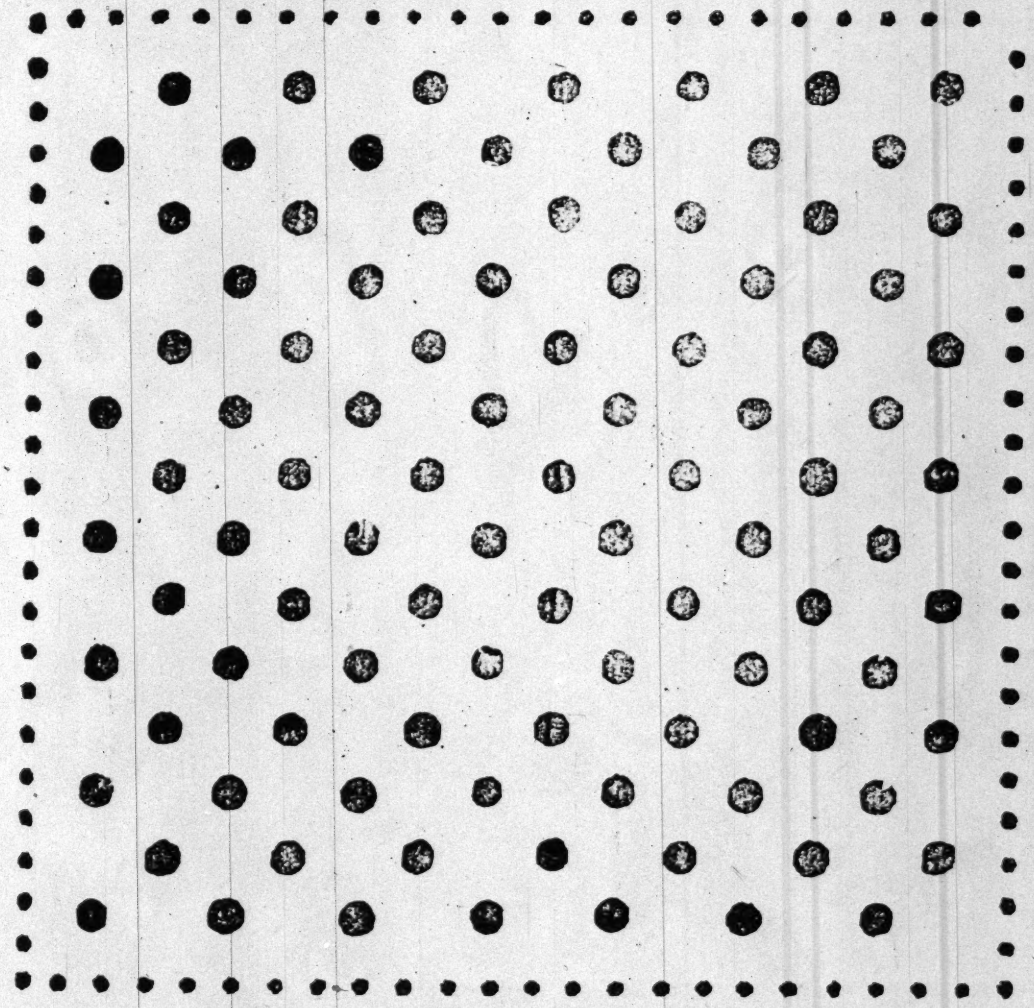
The figure 1. sheweth the alleyes which both compasse about, and also crosse ouer the ground-plot, and the figure 2. sheweth the foure quarters where the fruit-trees are to be planted.

Now if either the true nature and largneſſe of the ground be sufficient, or your owne abilitie of purſſe so great that you may compaſſe your desires in these earthly pleasures, it shall not be amiſſe, but a matter of great state, to make your ground-plot full as bigge againe, that is to say, to containe eight large quarters, the first foure being made of an euen leuell, the other foure being rayſed at least eight foote higher then the first, with conuenient stayres of state for ascending to the same, to be likewise vpon another euen leuell of like forme, and if in the center of the alleyes, being the mid-point betweene the squares, might be placed any quaint fountaines or any other antique standard, the platforme would be more excellent and if vpon the ascent from one leuell to another there might be built some curious and artificiall banquetting house, it would giue luſter to the Orchard.

Now for the planting and furniſhing of these quarters: you shall vnderſtand that if your Orchard containe but foure quarters, then the first shalbe planted with Apple-

træs of all sorts, the second with Peares and Wardens of all sorts, the third with Quinces & Chesnutes, the fourth with Medlars & services. Against the North side of your Orchard wall against which the South sunne reflects, you shall plant the Abricot, Verdochio, Peach, and Damaske-plumbe: against the East side of the wall, the whit Muskadine Grape, the Pesco-plumbe, and the Emperiall-plumbe: against the West side the grafted Cherries, and the Olive-træ: and against the South side the Almond, & Figge træ. Round about the skirts of every other outward or inward alley, you shall plant, the Wheate plumbe, both yealow & redde, the Rye-plumbe, the Damson, the Horse-clog, Bulleys of all kindes, ordinary french Cherryes, Filberts, and Nuts of all sorts, together with the Prune-plumbe, and other such like stone fruits. But if your Orchard be of state and prospect, so that it containe eight quarters or more (according to the limitation of the earth) then you shall in every severall quarter plant a severall fruit, as Apple-trees in one quarter, Peares in another, Quinces in another, Wardens in another, and so forth of the rest. Also you shall observe in planting your Apples, Peares, and Plumbes, that you plant your summer or early fruit by themselues, and the Winter or long lasting fruit by themselues. Of Apples, your Jemtings, Wibourns, Pomederoy, and Quæne-Apples are reckoned the best earely fruits, although there be diuers others, and the Pippin, Peare-maine, Apple-John, and Russetting, your best Winter and long lasting fruit, though there be a world of other: for the tastes of Apples are infinite, according to there composition and mixture in grafting. Of Peares your golden Peare, your Katherine-Peare, your Lording, and such like, are the first, and your stone-Peare, Warden-Peare, and choake-Peare, those which indure longest. And of Plumbes the rye-plumbe is first, your Wheate-plumbe next, and all the other sorts of plumbes ripen all most together in one season, if they haue equall warmth, and be all of like comfortable standing.

Now



Now for the orderly placing of your trees, you shall vnderstand that your Plumbe-trees (which are as it were a fence or guard about your great quarters) would be placed in rowes one by one, aboue fiue fote distance one from another, round about each skirt of euery alley: your Apple trees & other greater fruit which are to be planted in the quarters, would be placed in such arteficiall rowes that which way soeuer a man shall cast his eyes yet hee shall see the trees euery way stand in rowes, making squares, alleyes, and deuisions, according to a mans ima-

gination, according to the figure before, which I would haue you suppose to be one quarter in an Orchard, and by it you may easily compound the rest: wherein you shall vnderstand that the lesser pricks doe figure your Plumbe-trees, & the greater pricks your Apple trees, and such other large fruit.

Now you shall vnderstand that euery one of these great trees which furnish the maine quarter, shall stand in a direct line, iust twelue foote one from another, which is a space altogether sufficient inough for there spreading, without waterdropping or annoying one another; prouided that the Fruiterer, according to his duty, be carefull to preserue the trees vpright and to vnderprope them when by the violence of the winde they shall swarue any way. Vpon the ascent or rising from one leuell to another, you may plant the Barberry-trees, Feberries, and Raspberries, of all sorts, which being spreading, thorny and sharpe trees, take great delight to grow thicke and close together, by which meanes often times they make a kinde of wall, hedge, or fencing, where they stand.

Hauing thus shewed you the ground-plot and proportion of your Orchard, with the seuerall deuisions, ascents, and squares, that should be contained therein, and the fruits which are to furnish euery such square and deuision, and their orderly placing, it now rests that you vnderstand that this Orchard-plot, so neare as you can bring it to passe, doe stand most open and plaine, vpon the South and West sunne, and most defended from the East and North windes and bitternesse, which being obserued your plot is then perfect and absolute.

Now forasmuch as where nature, fruitfulnesse, and situation doe take from a man more then the halfe part of his industrie, and by a direct and easie way doth lead him to that perfection which others cannot attaine to without infinit labour and trauell: and whereas it is nothing so commendable to maintaine beautie, as to make deformitie beautifull, I will speake something of the framing

of

of Orchard-plots there where both nature, the situation, and barrainnesse, doe vtterly deny the enioying of any such commoditie, as where the ground is vneuen, stonie, sandy, or in his lownesse subiect to the ouerflow of waters, all being apparant enemies to these places of pleasure and delight. First, for the vneuennesse of the ground, if that be his vttermost imperfection, you shall first not onely take a note with your eye, but also place a marke vpon the best ascent of the ground to which the leuell is fittest to be drawne, and then plowing the ground all ouer with a great common plough, by casting the furrowes downward, seeke to fill vp and couer the lesser hollownesses of the ground, that their may not any thing appeare but the maine great hollowes, which with other earth which is free from stones, grauell, or such like euils, you shall fill vp and make leuell with that part where your marke standeth, and being so leuelled, forthwith draw the plot of your Orchard: but if the ground be not onely vneuen but also barraine, you shall then to euery loade of earth you carry to the leuelling adde a loade of Manure, either Ore Manure, or Horse Manure, the rubbish of houses, or the cleansings of olde ditches, or standing poles, and the earth will some become fertill and perfect; but if the ground be stonie, that is, full of great stones, as it is in Darbishire about the Peake or East Mores, for small pibbles or small lime-stones are not very much hurtfull, then you shall cause such stones to be digd vp, and fill vp the places where they lay either with marle, or other rich earth, which after it hath beene setled for a yeere or two you shall then plough, and leuell it, and so frame forth the plot of your Orchard. If the ground be onely a barraine sand, so that it wanteth strength either to maintaine or bring forth, you shall then first digge that earth into great trenches, at least foure foote deepe, and filling them vp with Ore Manure, mire it with the sand that it may change some part of the colour thereof and then leuelling it fashion out your Orchard. But lastly, and which is of all the

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tions the worst, if you haue no ground to plant your Orchard vpon, but such as either through the neighbourhood of riuers, descent of Mountaines, or the earths owne naturall qualitie in casting and vomiting out water and moysture, is subiect to some small ouerflowes of water, by which you cannot attaine to the pleasure you seeke, because fruit-trees can neuer indure the corruption of waters, you shall then in the dryest season of the yeere, after you haue marked out that square or quantitie of ground which you intend for your Orchard, you shall then cast therein sundry ditches, at least fiftéene foote broad, and nine foote deepe, and not aboue twelue foote betwixt ditch and ditch, vpon which reserued earth casting the earth that you digged vp, you shall raise the bankes at least seauen foote high of firme earth, and keepe in the top the full breadth of twelue foote, with in a foote or little more: and in the casting vp of these bankes you shall cause the earth to be beaten with maules and broad beetels that it may lye firme, fast, and leuell, and after these bankes haue rested a yeere or more, and are sufficiently setled, you may then at the neather end of the banke, neare to the verge of the water plant store of Dsyers, which will be a good defence to the banke, and vpon the top and highest part of the banke you shall plant your Orchard and fruit-trees, so that when any inundation of water shall happen, the ditches shalbe able inough to receiue it; or else making a passage from your Orchard into some other sewer, the water exceeding his limits may haue a free current or passage: besides these ditches being neatly kept, and comforted with fresh water, may make both pleasant and commodious fish-ponds. Also you must be carefull in casting these bankes that you doe not place them in such sort that when you are vpon one you cannot come to the other, but rather like a maze, so that you may at pleasure passe from the one to the other round about the ground, making of diuers bankes to the eye but one banke in substance, and of diuers ponds in appearance, but one in true iudgement. And thus much for the plot or situation of an Orchard.

Of

Chap. II.

Of the Nurſerie where you ſhall ſet all manner of Kernels, and Stones, for the furniſhing of the Orchard.

ALthough great perſons, out of their greatneſſe and abilitie, doe buy their fruit trees ready grafted, and ſo in a moment may plant an Orchard of the greateſt quantitie, yet ſith the Husbandman muſt raiſe every thing from his owne indeauours, and that I onely write for his profit, I therefore hould it moſt conuenient to beginne with the nurſery or ſtore-houſe of fruits, from whence the Orchard receiueth his beauty and riches.

This Nurſery muſt be a peece of principall ground, either through Art or Nature, ſtrongly fenced, warme, and full of good ſhelter: for in it is onely the firſt infancy and tendernes of fruit-trees, becauſe there they are firſt kernells, or ſtones, after ſprigs, and laſtly trees.

Now for the manner of chuſing, ſowing, and planting them in this nurſery, I differ ſome thing from the french practiſe, who would chuſe the kernells from the cider preſſe, ſow them in large beds of earth, and within a yeere after replant them in a wilde Orchard: now for mine owne part, though this courſe be not much faulty, yet I rather chuſe this kinde of practiſe, firſt: to chuſe your kernells either of Apples, Peares, or Wardens, from the beſt and moſt principalleſt fruit you can taſte, for although the kernell doe bring forth no other tree but the plaine ſtocke vpon which the fruit was grafted, as thus, if the graft were put into a Crab-ſtocke the kernell brings forth onely a Crab-tree, yet when you taſte a perfect and delicate Apple, be aſſured both the ſtocke and graft were of the beſt choiſe, and ſo ſuch kernells of beſt reckoning. When you haue then a competent quantitie of ſuch kernells, you

shall take certaine large pots, in the fashion of milke-boules, all full of hoales in the bottome, through which the raine and superfluous moysture may auoyde, and either in the Monthes of March or November (for those are the best seasons) fill the pots three parts full of the finest, blackest, and richest mould you can get, then lay your kernells vpon the earth, about foure fingars one from another, so many as the vessell can conuenientlie containe, and then with a siue sift vpon them other fine moulds almost three fingars thicke, and so let them rest, filling so many pots or vessells as shall serue to receiue your quantitie of kernells of all sorts. Now if any man desire to know my reason why I rather desire to set my kernells rather in vessells then in beds of earth, my answere is, that I haue often found it in mine experience, that the kernell of Apples, Peares, Quinces, and such like, are such a tender and dainty seede that it is great odds but the wormes will deuoure and consume them before they sprout, who naturally delight in such seedes, which these vessels onely doe preuent: but to proceede.

After your kernells are sprouted vp and growne to be at least seauen or eight inches high, you shall then within your nursery digge vp a border about two foote and an halfe broad, more then a foote deepe, and of such conuenient length as may receiue all your young plants, and hauing made the mould fine and rich with Manure, you shall then with your whole hand gripe as much of the earth that is about the plant as you can conueniently hould, and so take both the plant and the mould out of the vessell, and replant it in the new drest border: and you shall thus doe plant after plant, till you haue set euery one, and made them firme and fast in the new mould: wherein you are to obserue these two principles, first that you place them at least fiue foote one from another, and secondly, that such kernells as you set in your vessells in March, that you replant them in borders of earth in November following, and such as you set in November to replant in March following,

following, and being so replanted to suffer them to grow till they be able to beare grafts, during which time you shall diligently obserue, that if any of them chance to put forth any superfluous branches or cyons, which may hinder the growth of the body of the plant, that you carefully cut them away, that thereby it may be the sooner inabled to beare a graft: for it is euer to be intended that whatsoeuer proceedeth from kernells are onely to be preserued for stockes to graft on, and for no other purpose.

Now for the stones of Plumbes, & other stone fruit, you shall vnderstand that they be of two kindes, one simple and of themselues, as the Rye-plumbe, Wheate-plumbe, Damson, Prune-plumbe, Horse-clogge, Cherry, and such like, so that from the kernells of them issueth trees of like nature and goodnesse: the other compounded or grafted plumbes, as the Abricot, Pescod, Peach, Damaske, Verdochyo, Emperiall, and such like, from whose kernells issueth no other trees but such as the stockes were vpon which they were grafted. Now, for the manner of setting the first, which are simple and vncompounded, you shall digge vp a large bedde of rich and good earth a month or more before March or Nouember, and hauing made the mould as fine as is possible, you shall flat-wise thrust euery stone, a foote one from another, more then three fingers into the mould, and then with a little small rake, made for the purpose, rake the bedde ouer and close vp the holes, and so let them rest till they be of a yeares groath, at which time you shall replant them into seuerall borders, as you did your Apple-tree plants and others.

Now for the kernells of your compounded or grafted Plumbes, you shall both set them in beddes and replant them into seuerall borders, in the same manner as you did the other kernells of Plumbes, onely you shall for the space of eight and forty houres before you set them steepe them in new milke, forasmuch as the stones of them are more hard, and with greater difficulty open and sprout in

the earth, then any other stone whatsoeuer: and thus hauing furnished your Nursery of all sorts of fruits and stockes, you shall when they come to sufficient age and bignesse graft them in such order as shall be hereafter declared.

CHAP. III.

Of the setting or planting of the Cyons or Branches of most sorts of Fruit trees.

AS you are to furnish your nursery with all sorts of kernells and stones, for the breeding of stockes where on to graft the dainties fruits you can compasse, so shall you also plant therein the cyons and branches of the best fruit trees: which cyons and branches doe bring forth the same fruit which the trees doe from whence they are taken, and by that meanes your nursery shall euer afford you perfect trees, wherewith either to furnish your owne grounds, or to pleasure your neighbours. And herein by the way you shall vnderstand that some trees are more fit to be set then to be sowne, as namely, the Seruice tree, the Medler, the Filbert and such like. Now for the Seruice-tree, he is not at all to be grafted, but set in this wise: take of the hastiest cyons such as be somewhat bigger then a mans thumbe, and cutting away the branches thereof, set it in a fine loose mould, at least a foote deepe, and it will prosper exceedingly, yet the true nature of this tree is not to be remoued, and therefore it is conuenient that it be planted where it should euer continue: in like manner to the Seruice-tree, so you shall plant the bastard cyons of the Medlar tree either in March or October, and at the waine of the moone.

Now for the Filbert, or large Hasell-nut, you shall take the smallest cyons or wands, such as are not aboue two yeeres growth, being full of short heauie twiggs, and grow from the roote of the maine tree, and set them in a loose

lose mould, a foote deepe, without pruning or cutting away any of the branches, and they will prosper to your contentment. Now for all sorts of Plumbe-trees, Apple trees or other fruit-trees which are not grafted, if you take the young cyons which grow from the rootes cleane from the rootes, and plant them either in the spring, or fall, in a fresh and fine mould, they will not onely prosper, but bring forth fruit of like nature and quantitie to the trees from whence they were taken.

Now for your grafted fruit, as namely, Apples, Plumbes, Cherryes, Mulberries, Quinces, and such like, the cyons and branches of them also will take roote and bring forth fruit of the same kinde that the trees did from whence they were taken: but those cyons or branches must ever be chosen from the upper parts of the trees, betwixt the feast of all Saints and Christmas; they must be bigger then a mans finger, smooth, straight, and without twigges: you shall with a sharpe chissell cut them from the body or armes of the tree with such care, that by no meanes you raise up the barke, and then with a little yealow ware cover the place from whence you cut the cyon: then having digged and dunged the earth well where you intend to plant them, and made the mould easie, you shall with an Iron, as bigge as your plant, make a hoale a foote deepe or better, and then put in your cyon and with it a few Oates, long steept in water, and so fire it firme in the mould, and if after it beginneth to put forth you perceive any young cyons to put forth from the root thereof, you shall immediatly cut them off, & either cast them away or plant them in other places, for to suffer them to grow may breede much hurt to the young trees. Now where as these cyons thus planted are for the most part small and weake, so that the smallest breath of winde doth shake and hurt their rootes, it shalbe good to pricke strong stakes by them, to which, fastning the young plant with a soft hay rope it may the better be defended from stormes and tempests.

Nert to these fruit-trees, you shall vnderstand that your bush-trees, as Barberryes, Gooseberryes, or Feberryes, Raspberryes, and such like, will also grow vpon eyons, without rootes, being cut from their maine rootes in November, & so planted in a new fresh mould. And here by the way I am to giue you this note or caueat, that if at any time you finde any of these eyons which you haue planted not to grow and flourish according to your desire, but that you finde a certaine mislike or consumption in the plant, you shall then immediatly with a sharpe knife cut the plant off slope-wise vpward, about three fingars from the ground, and so let it rest till the nert spring, at which time you shall beholde new eyons issue from the roote, which will be without sicknesse or imperfection; and from the vertue of this experiment I imagine the gardners of antient time found out the meanes to get young eyons from olde Mulberry-trees, which they doe in this manner: first, you must take some of the greatest armes of the Mulberry-tree about the midst of November, and with a sharpe sawe to sawe them into bigge truncheons, about fiue teene inches long, and then digging a trench in principall good earth, of such depth that you may couer the truncheons, being set vp on end, with Manure and fine mould, each truncheon being a foote one from another, and couerd more then foure fingars aboue the wood, not fayling to water them whensoeuer neede shall require, and to preserue them from weeds and filthinesse, within lesse then a yeares space you shall behold those truncheons to put forth young eyons, which as soone as they come to any groath and be twigged, then you may cut them from the stockes, and transplant them where you please, onely the truncheons you shall suffer to remaine still, and cherish them with fresh dunge, and they will put forth many moe eyons, both to furnish your selfe and your friends. And thus much for the planting and setting of eyons or branches.

Of

Chap. IIII.

Of the ordinary and accuſtomed manner of Grafting all ſorts of Fruit-trees.

AS ſoone as your nurſery is thus amply furniſhed of all ſorts of ſtockes, proceeding from kernells and of all ſorts of trees proceeding from cyons, branches or vndergrowings, and that through ſtrength of yeeres they are growne to ſufficient abilitie to receiue grafts, which is to be intended that they muſt be at the leaſt ſixe or eight inches in compaſſe, for although leſſe many times both doth and may receiue grafts, yet they are full of debilitie and danger, and promiſe no aſſurance to the worke-mans labour, you ſhall then beginne to graft your ſtockes with ſuch fruits as from art and experience are meete to be conioyned together, as thus: you ſhall graft Apples vpon Apples, as the Pippin vpon the great Coſtard, the Peare-maine vpon the Ienetting, and the Apple-John or blacke annet vpon the Pomewater or Crab-tree: to conclude, any Apple-ſtocke, Crab-tree, or wilding, is good to graft Apples vpon, but the beſt is beſt worthy. So for Peares, you ſhall graft them vpon Peare ſtockes, Quinces vpon Quinces or Crab-trees, and not according to the opinion of the frenchman, vpon white thorne or willow, the Medlar vpon the Seruice-tree, and the Seruice vpon the Medlar, alſo Cherryes vpon Cherryes, & Plumbes vpon Plumbes, as the greater Abricots vpon the leſſer Abricots, the Peach, the Figge, or the Damſon tree, and to ſpeake generally without waſting more paper, or making a long circumſtance to ſlender purpoſe, the Damſon tree is the onely principall beſt ſtocke whereupon to graft any kinde of Plumbe or ſtone fruit whatſoeuer. The mixing of Stockes and Grafts.

After you haue both your ſtockes ready, and knowe which The choiſe of Grafts.

which grafts to ioyne with which stockes, you shall then learne to cut and chuse your grafts in this manner: loke from what tree you desire to take your grafts, you shall goe vnto the very principall branches thereof, and loke vp to the vpper ends, and those which you finde to be faireſt, smootheſt, and fulleſt of sappe, hauing the little knots, buds, or eyes standing close and thicke together, are the beſt and most perfect, especially if they grow vpon the East side of the tree, whereon the Sunne first loketh; these you shall cut from the tree in such sort that they may haue at least three fingers of the olde woode toyning to the young branch, which you shall know both by the colour of the barke, as also by a little round seame which maketh as it were a distinction betwixt the seuerall growths. Now you shall euer, as neere as you can, chuse your grafts from a young tree, and not from an olde, and from the tops of the principall branches, and not from the midſt of the tree, or any other superfluous arme or eyen; now if after you haue got your grafts you haue many dayes Journeys to carry them, you shall fould them in a few fresh mouldes, and binde them about with hay, and hay ropes, and so carry them all day, and in the night bury them all ouer in the ground and they will containe their goodneſſe for a long season.

How to graft in the Cleft.

Hauing thus prepared your grafts, you shall then beginne to graft, which worke you shall vnderstand may be done in euery month of the yeere, except November and October, but the beſt is to beginne about Christmas for all earely and forward fruit, and for the other, to stay till March: now hauing all your implements and neceſſaryes about you, fit for the Grafting, you shall first take your grafts, of what sort soeuer they be, and hauing cut the neather ends of them round and smoth without rayſing of the barke, you shall then with a sharp knife, made in the proportion of a great pen-knife slice downe each side of the grafts, from the seame or knot which parts the olde woode from the new, euen to the neather end, making it flat and thinne

thinne, cheifely in the lowest part, hauing onely a regardfull eye vnto the pith of the graft, which you may by no meanes cut or touch, and when you haue thus trimmed a couple of grafts, for moe I doe by no meanes alow vnto one stocke, although sundry other skilfull workmen in this Art alow to the least stocke two grafts, to the indifferent great three, and to the greatest of all foure, yet I affirme two are sufficiently inough for any stocke whatsoeuer, and albeit they are a little the longer in couering the head, yet after they haue couered it the tree prospereth more in one yeere then that which contayneth foure grafts shall doe in two, because they cannot haue sap inough to maintaine them, which is the reason that trees for want of prosperitie grow croked and deformed: but to my purpose. When you haue made your grafts ready, you shall then take a fine thinne sawe, whose teeth shalbe filed sharpe and euen, and with it (if the stocke be exceeding small) cut the stocke round off within lesse then a foote of the ground, but if the stocke be as bigge as a mans arme, then you may cut it off two or three foote from the ground, and so consequently the bigger it is the higher you may cut it, and the lesser the nearer vnto the earth: as soone as you haue sawne off the vpper part of the stocke, you shall then take a fine sharpe chissell, somewhat broader then the stocke, and setting it euen vpon the midst of the head of the stocke somewhat wide of the pith, then with a mallet of wood you shall stricke it in and cleaue the stocke, at least foure inches deepe, then putting in a fine little wedge of Iron, which may keepe open the cleft, you shall take one of your grafts and loke which side of it you intend to place inward, and that side you shall cut much thinner then the out side, with a most heedfull circumspection that by no meanes you loosen or rayse vp the barke of the graft, cheifly on the out side, then you shall take the graft, and wetting it in your mouth place it in one side of the cleft of the stocke, and regard that the very knot or seame which goes about the graft, parting the olde wood from the new, do rest di-

rectly vpon the head of the stocke, and that the out side of the graft doe agree directly with the out side of the stocke, ioyning barke vnto barke, and sappe vnto sappe, so euen, so smooth, and so close, that no ioyners woorke may be discerned to ioyne more artificially: which done, vpon the other side of the stocke, in the other cleft, you shall place your other graft, with full as much care, diligence, and euery other obseruation: when both your grafts are thus orderly and artificially placed, you shall then by setting the haft of your chissell against the stocke, with all lenitie and gentlenesse, draw forth your wedge, in such sort that you doe not displace or alter your grafts, and when your wedge is forth you shall then looke vpon your grafts, and if you perceiue that the stocke doe pinch or squize them, which you may discerne both by the straitnesse and bending of the outmost barke, you shall then make a little wedge of some greene sappy woode, and driuing it into the cleft, ease your grafts, cutting that wedge close to the stocke. When you haue thus made both your grafts perfect, you shall then take the barke of either Apple-tree, Crab-tree or Willow-tree, and with that barke couer the head of the stocke so close that no wet or other annoyance may get betwixt it and the stocke, then you shall take a conuenient quantitie of clay, which indeede would be of a binding mingled earth, and tempering it well, either with mosse or hay, lay it vpon the barke, and daube all the head of the stocke, euen as low as the bottome of the grafts, more then an inch thicke, so firme, close, and smooth as may be, which done, couer all that clay ouer with soft mosse, and that mosse with some ragges of woollen cloath, which being gently bound about with the inward barkes of Willow, or Osyar, let the graft rest to the pleasure of the highest: and this is called grafting in the cleft.

Notes. Now there be certaine obseruations or caueats to be respected in grafting, which I may not neglect: as first, in trimming and preparing your grafts for the stocke: if the grafts be either of Cherry, or Plumbe, you shall not

cut

cut them so thinne as the grafts of Apples, Quinces, or Medlars, because they haue a much larger and rounder pith, which by no meanes must be toucht but fortefied and preserued, onely to the neather end you may cut them as thinne as is possible, the pith onely preserued.

Secondly, you shall into your greatest stockes put your greatest grafts, and into your least, the least, that there may be an equall strength and conformitie in their conjunction.

Thirdly, if at any time you be inforced to graft vpon an olde tree, that is great and large, then you shall not graft into the body of that tree, because it is impossible to keepe it from putrifaction and rotting before the grafts can couer the head, but you shall chuse out some of the principall armes or branches, which are much more slender, and graft them, as is before shewed, omitting not dayly to cut away all cyons, armes, branches, or superfluous sprigs which shall grow vnder those branches which you haue newly grafted: but if there be no branch, small or tender inough to graft in, then you shall cut away all the maine branches from the stocke, and couering the head with clay and mosse, let it rest, and within three or foure yeeres it will put forth new cyons, which will be fit to graft vpon.

Fourthly, if when you either sawe off the top of your stocke, or else cleaue the head, you either raise vp the barke or cleaue the stocke too deepe, you shall then sawe the stocke againe, with a little more carefulnesse, so much lower as your first errour had committed a fault.

Fiftly, you shall from time to time looke to the binding of the heads of your stockes, in so much that if either the clay doe shrinke away or the other couerings doe loosen, by which defects ayre, or wet, may get into the incision, you shall presently with all speede amend and repaire it.

Lastly, if you graft in any open place where cattell doe graze, you shall not then forget as soone as you haue finisht your worke to bush or hedge in your graft, that it may be defended from any such negligent annoyance. And thus

much for this ordinary manner of grafting, which although it be generall and publike to most men that knoweth any thing in this art, yet is it not interiour, but the principallest and surest of all other.

Chap. V.

Of diuers other wayes of grafting, their vses and purposes.



Although for certainty, vse, and commodity, the manner of grafting already prescribed is of sufficiency inough to satisfie any constant or reasonable vnderstanding, yet for nouelty sake, to which our nation is infinitly addicted, and to satisfie the curious, who thinke their iudgements disparaged if they heare any authorised traueller talke of the things which they haue not practised, I will proceede to some other more quaint manners of grafting, and the rather because they are not altogether vnnecessary, hauing both certainety in the worke, pleasure in the vse, and benefit in the serious imploying of those howers which else might challenge the title of idlenesse, besides they are very well agreeing with the soyles and fruits of this Empyre of great Brittaine and the vnderstandings of the people, for whose seruice or benefit, I onely vndergoe my trauell.

You shall vnderstand therefore, that there is another way to graft, which is called grafting betweene the barke and tree, and it is to be put in vse about the latter end of February, at such time as the sappe beginnes to enter into the trees: and the stockes most fit for this manner of grafting are those which are oldest and greatest, whose graine being rough and vneuen, either through shaking or twinding, it is a thing almost impossible to make it cleaue in any good fashion, so that in such a case it is meete the

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the grafter exercise this way of grafting betwixt the barke and the træ, the manner whereof is thus.

First, you shall dresse your grafts in such sort as was before discribed when you grafted in the cleft, onely they shall not be so long from the knot or seame downe ward by an inch or more, neither so thicke, but as thinne as may be, the pith onely preserued, and at the neather end of all you shall cut away the barke on both sides, making that end smaller and narrower then it is at the ioynt or seame, then sawing off the head of the stocke, you shall with a sharpe knife pare the head round about, smoth and plaine, making the barke so euen as may be, that the barke of your grafts and it may ioyne like one body, then take a fine narrow chissell, not exceeding sharpe, but somewhat rebated, and thrust it hard downe betwixt the barke and the træ, somewhat more then two inches, according to the iust length of your graft, and then gently thrust the graft downe into the same place, euen close vnto the ioynt, hauing great care that the ioynt rest firme and constant vpon the head of the stocke, and thus you shall put into one stocke not aboue træ grafts at the most, how euer either other mens practise, or your owne reading doe perswade you to the contrary. After your grafts are fitt and placed, you shall then couer the head with barke, clay, and mosse, as hath beene formerly shewed: also you shall fasten about it some bushes of thorne, or sharpe whinnes, which may defend and keepe it from the annoyance of Pye-annats, and such like great birds. Graft twixt barke.

There is another way of grafting, which is called grafting in the scutchion, which howsoeuer it is esteemed, yet is it troublesome, incertaine, and to small purpose: the season for it is in summer, from May till August, at what time træes are fullest of sappe and fullest of leaues, and the manner is thus: take the highest and the principallest branches of the toppe of the træ you would haue grafted, and without cutting it from the olde wood chuse the best eye and budding place of the eyon, then take another such

like eye or budde, being great and full, and first cut off the leafe hard by the budde, then hollow it with your knife the length of a quarter of an inch beneath the budde, round about the barke, close to the sappe, both aboue and below, then slit it downe twice so much wide of the budde, and then with a small sharpe chissell raise vp the scutchion, with not onely the budde in the midst but euen all the sappe likewise, wherein you shall first raise that side which is next you, and then taking the scutchion betweene your fingars, raise it gently vp without breaking or bruising, and in taking it off hould it hard vnto the woode, to the end the sappe of the budde may abide in the scutchion, for if it depart from the barke and cleaue to the woode, your labour is lost, this done you shall take another like eyon, and hauing taken off the barke from it, place it in the others place, and in taking off this barke you must be carefull that you cut not the woode, but the barke onely, and this done you shall couer it all ouer with redde waxe, or some such glutenous matter; as for the binding of it with hempe and such trumpery it is vtterly disallowed of all good grafters: this manner of grafting may be put in practise vpon all manner of eyons, from the bignesse of a mans little fingar to the bignesse of a slender arme.

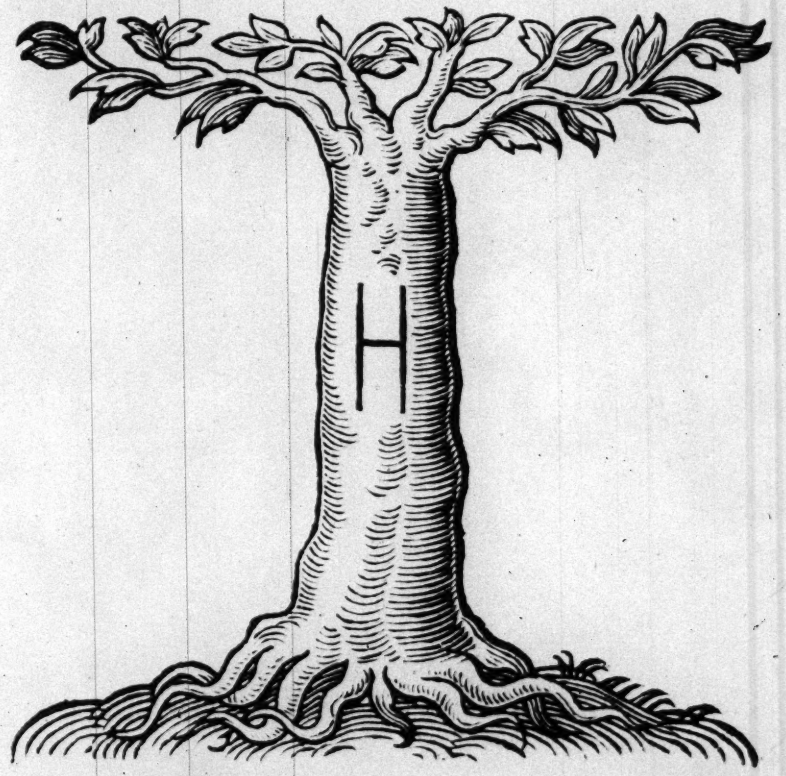
Grafting with the Leafe.

Not much vnlike vnto this, is the grafting with the Leafe, and of like worth, the art whereof is thus: any time betwixt midst May, vntill the midst of September, you shall chuse, from the toppe of the sunne-side of the tree, the most principall young eyon you can see, whose barke is smoothest, whose leaues are greatest, and whose sappe is fullest, then cutting it from the tree note the principall leafe thereof, and cut away from it all the woode more then about an inch of each side of the leafe, then cutting away the vndermost part of the barke with your knife, take peece meale from the barke all the woode and sappe, saue onely that little part of woode and sappe which feedeth the leafe, which in any wise must be left behind, so that the graft will carry this figure.

Then



Then goe to the body, arme, or branch of that tree which you intend to graft, which is to be presupposed must euer haue a smooth and tender barke, and with a very sharpe knife slit the barke, two slits at least, two inches long a peece, and about halfe an inch or more distance betweene the two slits: then make another slit crosse-wise ouerthwart, from long slit to long slit, the figure whereof will be thus:



Then with your knife raise the barke gently from the tree,

træ, without breaking, cracking, or bruſing: then take your graft, and putting it vnder the barke lay it flat vnto the ſappe of the træ, ſo as that little ſappe which is left in the leafe, may without impediment cleaue to the ſappe of the træ, then lay downe the barke cloſe againe and couer the graft, and with a little vntwound hempe, or a ſoft woollen liſt, binde downe the barke cloſe to the graft, and then couer all the inciſions you haue made with græne ware: by this manner of grafting you may haue vpon one træ ſundry fruits, as from one Apple-træ, both Pippins, Peare-maines, Ruſſettings and ſuch like, nay, you may haue vpon one træ, ripe fruit all ſummer long, as Jenettings from one branch, Cillings from another, Wilbourns from another, Coſtards and Quæne Apples from others, and Pippens and Ruſſettings, from others, which bringeth both delight to the eye, and admiration to the ſenſe, and yet I would not haue you imagine that this kinde of grafting doth onely worke this effect, for as before I ſhewed you, if you graft in the cleft (which is the ſafeſt way of all grafting) ſundry fruits vpon ſundry armes or bowes, you ſhall likewiſe haue proceeding from them ſundry ſorts of fruits, as either Apples, Plumbes, Peares or any other kind, according to your compoſition and induſtry; as at this day we may dayly ſee in many great mens Orchards.

Grafting on the toppes of træs.

There is yet another manner of grafting, and it is of all other eſpecially vſed much in Italy, and yet not any thing diſagræable with our climate, and that is to graft on the ſmall eyons which are on the toppes of fruit træs, ſurely an experience that carryeth in it both difficulty and wonder, yet being put to approbation is no leſſe certaine then any of the other, the manner whereof is thus: you ſhall firſt after you haue choſen ſuch and ſo many grafts as you doe intend to graft, and trimd them in the ſame manner as you haue bæne taught formerly for grafting within the cleft, you ſhall then mount vp into the toppe of the træ, vpon which you meane to graft, and there make choiſe of the higheſt

highest and most principallest cyons (being cleane barkt and round) that you can perceiue to grow from the trée, then laying the graft, and the cyon vpon which you are to graft, together, see that they be both of one bignesse and roundnesse: then with your grafting knife cut the cyon off betweene the olde woode and the new, and cleaue it downe an inch and an halfe, or two inches at the most: then put in your graft (which graft must not be cut thinner on one side, then on the other, but all of one thicknesse) and when it is in, see that the barke of the graft both aboue and below, that is, vpon both sides, doe ioyne close, euen, and firme with the barke of the branch or cyon, and then by foulding a little soft towe about it, keepe them close together, whilst with clay, mosse, and the in-most barke of Osyars you lappe them about to defend them from ayre, winde, and tempests. And herein you shall obserue to make your graft as short as may be, for the shortest are best, as the graft which hath not aboue two or three knots, or buddes, and no more. You may, if you please, with this manner of grafting graft vpon euery seuerall cyon, a seuerall fruit, and so haue from one trée many fruits, as in case of grafting with the leafe, and that with much more speede, by as much as a well-growne graft is more forward and able then a weake tender leafe. And in these seuerall wayes already declared, consisteth the whole Art and substance of Grafting: from whence albeit many curious braines may, from preuaricating trickes, beget shewes of other fashions, yet when true iudgement shall looke vpon their workes, he shall euer finde some one of these experiments the ground and substance of all their labours, without which they are able to doe nothing that shall turne to an assured commoditie.

Now when you haue made your selfe perfect in the sowing, setting, planting and grafting of trées, you shall then learne to know the effects, wonders, and strange issues which doe proceede from many quaint motions and helpes in grafting, as thus: if you will haue Peaches, Cherryes, Apples, Quinces, Medlars, Damsons, or any The effects of Grafting.

Plumbe whatsoeuer, to ripen earely, as at the least two months before the ordinary time, and to continew at least a month longer then the accustomed course, you shall then gratt them vpon a Mulberry stocke: and if you will haue the fruit to tast like spice, with a certaine delicate perfume, you shall boyle Honey, the powder of Cloues and Soare together, and being cold annoynt the grafts therewith before you put them into the cleft, if you gratt Apples, Peares, or any fruit vpon a Figge-træ stocke, they will beare fruit without blooming: if you take an Apple gratt, & a Peare gratt, of like bignesse, and hauing cloven them, ioyne them as one body in grafting, the fruit they bring forth will be halfe Apple and halfe Peare, and so likewise of all other fruits which are of contrary tastes and natures: if you graft any fruit-træ, or other træ, vpon the Holly or vpon the Cypresse, they will be græne, and keepe their leaues the whole yeare, albeit the winter be neuer so bitter.

If you graft either Peach, Plumbe, or any stone-fruit vpon a Willow stocke, the fruit which commeth of them will be without stones.

If you will change the colour of any fruit, you shall boare a hole slope-wise with a large auger into the body of the træ, euen vnto the pith, and then if you will haue the fruit yealow you shal fill the hole with Safron dissolued in water: if you will haue it redde, then with Saunders, and of any other colour you please, and then stoppe the hole vp close, and couer it with red or yealow ware: also if you mixe the coulour with any spice or perfume, the fruit will take a rellish or tast of the same: many other such like conceits and experiments are practised amongst men of this Art, but sith they more concerne the curious, then the wise, I am not so carefull to bestow my labour in giuing more substantiall satisfaction, knowing curiosity loues that best which proceedes from their most paine, and am content to referre their knowledge to the searching of those bookes which haue onely strangnesse for their subiect, resolued that this I haue written is fully sufficient for the plaine English husbandman.

Of

Chap. VI.

Of the replanting of Trees, and furniſhing the Orchard,



So ſoone as your ſéedes, or ſets, haue brought forth plants, thoſe plants, through time, made able, and haue receiued grafts, and thoſe grafts haue couered the heads of the ſtockes and put forth goodly branches, you ſhall then take them vp, and replant them, (becauſe the ſooner it is done the better it is done) in thoſe ſeuerall places of your Orchard which before is appointed, and is intended to be prepared, both by dungging, digging, and euery orderly labour, to receiue euery ſeuerall fruit. And herein you ſhall vnderſtand, that as the beſt times for grafting are euery month (except October and November) and at the change of the moone, ſo the beſt times for replanting, are November and March onely, vnleſſe the ground be cold and moiſt and then January, or Februarie muſt be the ſooneſt all wayes, excepted that you doe not replant in the time of froſt, for that is moſt vnholſome.

Now when you will take vp your trées which you intend to replant in your Orchard, you ſhall firſt with a ſpade bare all the maine branches of the roote, and ſo by degrées digge and looſen the earth from the roote, in ſuch ſort that you may with your owne ſtrength raiſe the young trée from the ground, which done, you ſhall not, according to the faſhion of Fraunce, diſmember, or diſroabe the trée of his beauties, that is to ſay, to cut off all his vpper branches and armes, but you ſhall diligently preſerue them: for I haue ſéene a trée thus replanted after the fall of the leafe to bring forth fruit in the ſummer following: but if the trée you replant be olde then it is good to cut off the maine branches with in a foote of the ſtocke, leaſt the

The taking vp of trees.

sappe running vpward, and so forsaking the rote to sodainely doe kill the whole trée.

When you haue taken your trée vp, you shall obserue how, and in what manner, it stode, that is, which side was vpon the South and receiued most comfort from the sunne, and which side was from it and receiued most shadow and bleaknesse, and in the same sort as it then stode, so shall you replant it againe: this done you shall with a sharpe cutting-knife, cut off all the maine rotes, within halfe a foote of the trée, onely the small thridds or twist-rotes you shall not cut at all: then bringing the plant into your Orchard, you shall make a round hole in that place where you intend to set your trée (the rankes, manner, distance and forme whereof hath beene all ready declared, in the first Chapter:) and this hole shalbe at least foure foote ouerthwart euery way, and at least two foote deepe, then shall you fill vp the hole againe, fifteene inches deepe, with the finest blacke mould, tempered with Ore dunge that you can get, so that then the hole shalbe but nine inches deepe, then you shall take your trée and place it vpon that earth, hauing care to open euery seuerall branch and thrid of the rote, & so to place them that they may all looke downe into the earth, and not any of them to looke backe and turne vpward: then shall you take of the earth from whence your trée was taken, and tempering it with a fourth part of Ore dunge and sleet sope-asshes (for the killing of wormes) couer all the rote of your trée firmely and strongly: then with greene soddes, cut and ioyned artificially together, so sodde the place that the hole may hardly be discerned. Lastly take a strong stake, and driuing it hard into the ground neare vnto the new planted trée, with either a soft hay rope, the broad barke of Willow, or some such like vnfretting band, tye the trée to the stake, and it will defend it from the rage of winde and tempests, which should they but shake or trouble the rote, being new planted, it were inough to confound and spoyle the trée for euer.

Now, although I haue vnder the title and demonstra-

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tion of replanting one tree giuen you a generall instruction for the replanting of all trees whatsoeuer, yet, for as much as some are not of that strength and hardnesse to indure so much as some others will, therefore you shal take these considerations by the way, to fortefie your knowledge with.

First, you shall vnderstand that all your dainty and tender grafted Plumbes, and fruits, as Abricots, Peaches, Damaske-Plumbes, Verdochyos, Pescods, Emperialls, and diuers such like, together with Orenges, Cytrons, Almonds, Oliues, and others, which indeede are not familiar with our soyles, as being neerer neighbours to the sunne, doe delight in a warme, fat, earth, being somewhat sandy, or such a clay whose coldnesse by Manure is corrected, and therefore here with vs in the replanting of them you cannot bestow too much cost vpon the mould: as for the Damson, and all our naturall english Plumbes, they loue a fat, cold, earth, so that in the replanting of them if you shall lay too much dunge vnto their rote, you shall through the abundant heate, doe great hurt vnto the tree. The cherry delighteth in any clay, so that vpon such soyle you may vse lesse Manure, but vpon the contrary you cannot lay too much. The Medlar esteemeth all earths alike, and therefore whether it be Manured or no it skilles not, sunne and shadow, wet and drinesse, being all of one force or efficacy. The Peare and Apple-tree delights in a strong mixt soyle, and therfore indureth Manure kindly, so doth also the Quince and Warden: lastly the Filbert, the Hasell, and the Chesnut, loue cold, leane, moist, and sandy earths, in so much that there is no greater enimy vnto them then a rich soyle: so that in replanting of them you must euer seeke rather to correct then increase fertility.

You shall also vnderstand that all such fruit-trees as you doe plant against the walles of your Orchard (of which I haue spoken already & deciphered out their places) you shall not suffer to grow as of themselues, round, and from the wall, but at the times of pruning and dressing of them (which is euer at the beginning of the spring and immedi-

ately after the fall) you shall as it were plash them, and spread them against the wall, fouldıng the armes in lopes of leather, and nayling them vnto the wall: and to that end you shall place them of such a fit distance one from another, that they may at pleasure spread and mount, without interruption: the profit whereof is at this day scene almost in euery great mans Orchard: and although I haue but onely appointed vnto the wall the most quaint fruits of forraine nations; yet there is no fruit of our owne, but if it be so ordered it will prosper and bring forth his fruit better and in greater abundance. And thus much for the replanting of trees and furnishing of a well proportioned Orchard.

Chap. VII.

Of the Dressing, Dungging, Proyning, and Preseruing of Trees.



With after all the labour spent of ingendring by seede, of forteſying and inabling by planting, and of multiplying by grafting it is to little or no purpose if the trees be not maintained and preserued by dressing, dungging and proyning, I will therefore in this place shew you what belongs to that office or duty, and first, for the dressing of trees: you shall vnderstand that it containeth all whatsoeuer is meete for the good estate of the tree, as first, after your tree is planted, or replanted, if the season shall fall out hot, dry, and parching, insomuch that the moisture of the earth is sucked out by the attraction of the Sunne, and so the tree wanteth the nutriment of moisture, in this case you shall not omit euery morning before the rising of the sunne, and euery euening after the set of the Sunne, with a great watring-pot filled with water, to water & bath the rootes of the trees, if they be young trees, and newly planted, or replanted, but not otherwise: for

if

if the trees be olde, and of long growth, then you shall saue that labour, and onely to such olde trees you shall about the midst of November, with a spade, digge away the earth from the vpper part of the rootes and lay them bare vntill it be mid-March, and then mingling such earth as is most agreeable with the fruit and Ore-dunge and sope-ashes together, so couer them againe, and tread the earth close about them: as for the vncouering of your trees in summer I doe not hold it good, because the reflection of the sunne is somewhat too violent and dryeth the roote, from whence at that time the sappe naturally is gone: you shall also euery spring and fall of the leafe cleanse your fruit trees from mosse, which proceeding from a cold and cankerous moisture, breedeth dislike, and barrainenesse in trees: this mosse you must take off with the backe of an olde knife and leaue the barke smooth, plaine, and vnraced: also if you shall dunge such trees with the dunge of Swine, it is a ready away to destroy the mosse.

After you haue drest and trimmed your trees, you shall then proyne them, which is to cut away all those superfluous branches, armes, or cyons, which being either barraine, bruised or misplaced, doe like drones, steale away that nutriment which should maintaine the better deseruing sinewes, and you shall vnderstand that the best time for proyning of trees, is in March and Aprill, at which time the sappe ascending vpward, causeth the trees to budde: the branches you shall cut away are all such as shall grow out of the stocke vnderneath the place grafted, or all such as by the shaking of tempests shall grow in a disordered and ill fashioned crookednesse, or any other, that out of a well tempered iudgement shall seeme superfluous and burdensome to the stocke from whence it springs, also such as haue by disorder beene broken, or maimed, and all these you shall cut away with a hooke knife, close by the tree, vnlesse you haue occasion by some misfortune to cut away some of the maine and great armes of the tree, and then you shall not vse your knife for feare of tearing the barke, but

Proyning of Trees.

but taking your sawe you shall sawe off those great armes close by the tree, neither shall you sawe them off downeward but vpward, least the waight of the arme breake the barke from the body: And herein you shall also vnderstand that for as much as the mischances which beget these dismembrings doe happen at the latter end of Summer, in the gathering of the fruit, and that it is not fit such maymed and broken boughes hang vpon the tree till the Spring, therefore you shall cut them off in the Winter time, but not close to the tree by almost a foote, and so letting them rest vntill the spring, at that time cut them off close by the tree. Now if you finde the superfluitie of branches which annoy your trees to be onely small eyons, springing from the rootes of the trees, as it often happeth with all sorts of Plumbe-trees, Cherry-trees, Nut-trees, and such like, then you shall in the winter, bare the rootes of those trees, and cut off those eyons close by the roote: but if your trees be brouzed or eaten by tame-Deare, Goates, Sheepe, Kine, Oxen, or such like, then there is no help for such a misfortune but onely to cut off the whole head and graft the stocke anew.

Of Barke-bound.

Next to the proyning of trees, is the preseruing, phisicking, and curing of the diseases of trees: to which they are subiect as well as our naturall bodyes: and first of all, there is a disease called Barke-bound, which is when the barke, through a milslike and leprous dryneſſe, bindeth in the tree with such straitneſſe that the sappe being denied passage the body growes into a consumption: it is in nature like vnto that disease which in beasts is called hide-bound, and the cure is thus: at the beginning of March take a sharpe knife, and from the toppe of the body of the tree, to the very roote, draw downe certaine slits, or incisions, cleane through the barke, vnto the very sappe of the tree, round about the tree, & then with the backe of your knife open those slits and annoint them all through with Tarre, and in short space it will giue libertie vnto the tree to encrease & grow: this disease commeth by the rubbing of cattell against the tree, especially Swine, who are very poyson vnto all plants.

There

There is another disease in fruit-trées, called the Gall, and it eateth and consumeth the barke quit away, and so in time kills the trée: the cure is to cut and open the barke which you sée infected, and with a chissell to take away all that is foule and putrefied, and then to clappe Ore dunge vpon the place, and it will helpe it, and this must be done euer in winter. Of the Gall.

The Canker in fruit trées is the consumption both of the barke and the body, & it commeth either by the dropping of trées one vpon another, or else when some hollow places of the trée retaineth raine water in them, which fretting through the barke, poysoneth the trée: the cure is to cut away all such boughes as by dropping brédde the euill, and if the hollow places cannot be smoth and made euen, then to stoppe them with clay, ware, and sope-ashes mixt together. Of the Canker.

If the barkes of your trées be eaten with wormes, which you shall perceiue by the swelling of the barke, you shall then open the barke and lay there-vpon swines dunge, sage, and lime beaten together, and bound with a cloath fast to th: trée, and it will cure it: or wash the trée with colwespisse and vinegar and it will helpe it. Of wormeeaten barkes.

If your young trées be troubled with Pismiers, or Snailes, which are very noysome vnto them, you shall take vnslecht lime and sope-ashes and mingling them with wine-lées, spread it all about the rote of the trées so infected, and annoint the body of the trée likewise therewith, and it will not onely destroy them but giue comfort to the trée: the sote of a chimney or Oake sawe-dust spread about the rote will doe the same. Of Pismiers and Snailes.

If Caterpiliers doe annoy your young trées, who are great deuourers of the leaues and young buddes, and spoylers of the barke, you shall, if it be in the summer time, make a very strong brine of water and salt, and either with a garden pumpe, placed in a tubbe, or with squirts which haue many hoales you shall euery second day water and wash your trées, and it will destroy them, because Of Caterpillers, and Earewigges.

the Caterpiller naturally cannot indure moisture, but if neuertheleſſe you ſee they doe continue ſtill vpon your trees in Winter, then you ſhall when the leaues are falne away take dankiſh ſtraw and ſetting it on fire ſmeare and burne them from the tree, and you ſhall hardly euer be troubled with them againe vpon the ſame trees: roules of hay layd on the trees will gather vp Earewigges and kill them.

Of the barrainenesse of Trees.

If your trees be barraine, and albeit they flouriſh and ſpread there leaues brauely, yet bring forth no fruit at all, it is a great ſickneſſe, and the woꝛſt of all other: therefoꝛe you ſhall vnderſtand it proceedeth of two cauſes: firſt, of two much fertilitie, and fatneſſe of the ground, which cauſeth the leafe to put foꝛth and flouriſh in ſuch vnnaturall abundance, that all ſuch ſappe and nutriment as ſhould knit and bring foꝛth fruit, turnes onely vnto leafe, cyons, and vnpꝛofitable branches, which you ſhall perceiue both by the abundance of the leaues and by the colour alſo, which will be of a moꝛe blacker and deeper greene, and of much larger pꝛopoꝛtion then thoſe which haue but their naturall and pꝛoper rights: and the cure thereof is to take away the earth from the roote of ſuch trees and fill vp the place againe with other earth, which is of a much leaner ſubſtance: but if your tree haue no ſuch infirmitie of fatneſſe, but beareth his leaues and branches in good oꝛder and of right colour and yet notwithſtanding is barraine and bringeth foꝛth little oꝛ no fruit, then that diſeaſe ſpringeth from ſome naturall defect in the tree, and the cure thereof is thus: firſt, you ſhall vnbare the roote of the tree, and then noting which is the greateſt and pꝛincipalleſt branch of all the roote, you ſhall with a great wimble boare a hole into that roote and then dꝛiue a pinne of olde dꝛy Aſhe into the ſame (foꝛ Oake is not altogether ſo good) and then cutting the pinne off cloſe by the roote, couer all the head of the pinne with yealow waxe, and then lay the mould vpon the roote of the tree againe, and treade it hard and firmely downe, and there is no doubte but the tree will beare the yeere following: in Fraunce they vſe foꝛ this infirmitie to boare

a hoale in the body of the trée slope-wise, somewhat past the hart, and to fill vp the hoale with life honey and Rose-water mixt together, and incorporated for at least xxiiij. howers, and then to stoppe the hole with a pinne of the one wode: also if you wash the rotes of your trées in the draine water which runneth from your Barley when you steepe it Yfor alt, it will cure this disease of barrainenesse.

If the fruit which is vpon your trées be of a bitter and sowre tast, to make it more pleasant and swæt you shall wash your trée all ouer with Swines dunge and water mixt together, & to the rotes of the trées you shall lay earth and Swines dunge mixt together, which must be done in the month of January and February onely, and it will make the fruit tast pleasantly. And thus much for the dressing and preseruing of trées. Of the bitternesse of Fruit

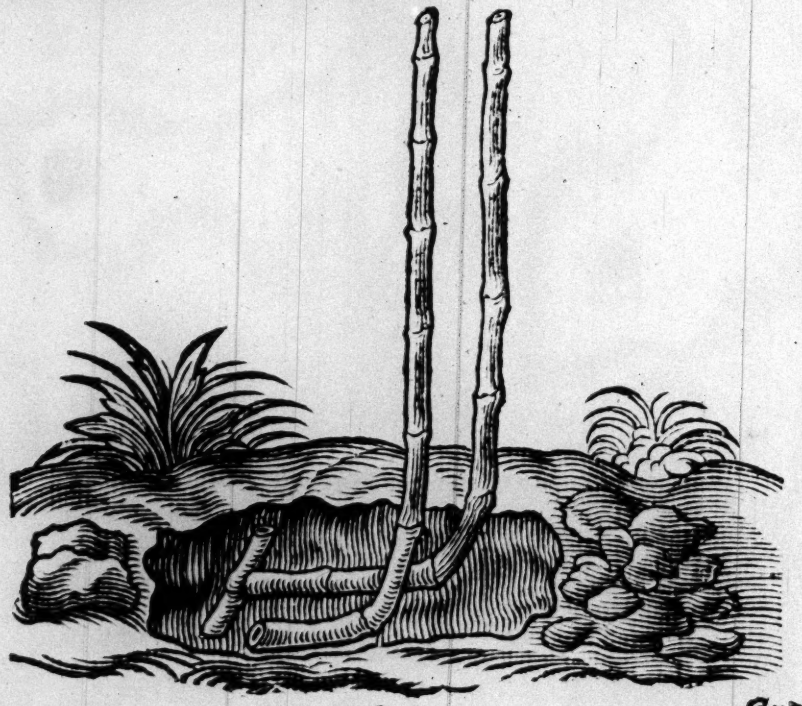
Chap. VIII.

Of the Vine, and of his ordering.

FOR as much as the nature, temperature, and clymate, of our soyle is not so truely proper and agréeing with the Vine as that of Fraunce, Italy, Spaine, and such like, and sith wée haue it more for delight, pleasure, and prospect, then for any peculyar profit, I will not vndertake Monsiuer Lybaults painefull labour, in discribing euery curious perfection or defect that belongs thereunto, as if it were the onely iewell and commoditie of our kingdome, but onely write so much as is fitting for our knowledge touching the maintaynance, increase, and preseruation thereof, in our Orchards, Gardens, and other places of recreation.

First then to speake of the planting or setting of the Vine, your greatest diligence must be to séeke out the best plants, and if that which is most strange, rare, great and pleasant be the best, then is that grape which is called Of planting or setting the Vine.

the Muſkadine, or Sacke grape, the beſt, and haue their beginning either from Spaine, the Canary Ilands, or ſuch like places: next to them is the French grape, of which there be many kindes, the beſt whereof is the grape of Orleance, the next the grape of Gaſcoynie, the next of Burdeaux, and the woꝛſt of Rochell, and not any of theſe but by induſtry will proſper in our Engliſh gardens: when therefoꝛe you chuſe your plants, you ſhall chuſe ſuch of the young cyons as ſpꝛinging from the olde woode, you may in the cutting cut at leaſt a ioynt oꝛ two of olde woode with the young: foꝛ the olde will take ſoneſt, and this olde woode muſt be at leaſt ſeauen oꝛ eight inches long, and the young cyon almoſt a yard, and the thicker and cloſer the ioynts of the young cyon are, ſo much the better they are: and the fit time foꝛ cutting and gathering theſe ſets are in midde-January, then hauing pꝛepared, digged, and dunged your earth the winter befoꝛe, you ſhall at the latter end of January take two of theſe ſets, oꝛ plants, placing them accoꝛding to this figure:



And

And lay them in the earth slope-wise, at least a foote deepe, leauing out of the earth, vncouered, not aboue foure or fiue ioynts, at the most, and then couer them with good earth firmely, closely, and strongly, hauing regard to raise those cyons which are without the earth directly vpward, obseruing after they be set, once in a month to weede them, and keepe them as cleane as is possible: for nothing is more noysome vnto them then the suffocating of weeds: also you shall not suffer the mould to grow hard or bind about the rootes, but with a small spade once in a fortnight to loosen and breake the earth, because there rootes are so tender that the least straytning doth strangle and confound them. If the season doe grow dry, you may vse to water them, but not in such sort as you water other plants, which is to sprinckle water round about the earth of the rootes, but you shall with a round Iron made for the purpose somewhat bigger then a mans finger, make certaine holes into the earth, close vpon the roote of the Vine, and powre therein either water, the dregges of strong-Ale, or the lees of Wine, or if you will you may mixe with the lees of Wine either Goats-milke, or Ewes-milke, and powre it into the holes and it will nourish the Vine exceedingly, and not the Vine onely, but all sorts of dainty grafted Plumbes, especially Peaches.

Of proyning the Vine.

Now for proyning the Vine, you shall vnderstand that it is euer to be done after the fall of the leafe, when the sappe is descended downeward: for if you shall proyne, or cut him, either in the spring, or when the sappe is aloft, it will bleede so exceedingly, that with great difficulty you shall saue the body of the tree from dying: and in proyning of the Vine you shall obserue two things, the first, that you cut away all superfluous cyons and branches, both aboue and below, which either grow disorderly aboue, or fruitlesselly below, and in cutting them you shall obserue, neither to cut the olde woode with the young cyon, nor to leaue aboue one head or leader vpon one branch: secondly, you shall in proyning, plash and spread the VINE

thinnely against the wall, giuing euery seuerall branch and eyon his place, and passage, and not suffer it to grow lowsely, rudely, or like a wilde thorne, out of all decency and proportion: for you must vnderstand that your Grapes doe grow euer vpon the youngest eyons, and if of them you shall preserue too many, questionlesse for want of nourishment they will lose their vertue, and you your profit. Now if your Vine be a very olde Vine, and that his fruit doth decay, either in quantitie or proportion; if then you finde he haue any young eyons which spring from his rote, then when you proyne him you shall cut away all the olde stocke, within lesse then an handfull of the young eyons, and make them the leaders, who will prosper and continue in perfection a long time after, especially if you trimme the rotes with fresh earth, and fresh dunge. Againe, if you be carefull to loke vnto your Vine, you shall perceiue close by euery bunch of grapes certaine small thredde-like eyons, which resemble twound wyars, curling and turning in many rings, these also take from the grapes very much nutriment, so that it shall be a labour very well imployd to cut them away as you perceiue them.

Experiments of the Vine.

Now from the Vine there is gathered sundry experiments, as to haue it tast more pleasant then the true nature of the grape, and to smell in the mouth odoriferously, or as if it were perfumed, which may be done in this sort: Take damaske-Rose-water and boyle therein the powder of Cloaues, Cynamon, three graines of Amber, and one of Muske, and when it is come to be somewhat thicke, take a round goudge and make a hole in the maine stocke of the Vine, full as deepe as the hart thereof, and then put therein this medicine, then stopping the hole with Cypresse, or Iumper, lay greene-wax thereupon, and binde a linnen cloath about it, and the next grapes which shall spring from that Vine will tast as if they were preserued or perfumed.

If you will haue grapes without stones, you shall take your plants and plant the small ends downeward and be assured your desire is attained.

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The Vine naturally of himselfe doth not bring forth fruit till it haue beene three yeeres planted: but if euening and morning for the first month you will bath his roots with Goats-milke or Cowes-milke, it will beare fruit the first yeere of his planting. Lastly, you may if you please graft one Vine vpon another, as the sweet vpon the sower, as the Muscadine grape, or greeke, vpon the Rochell or Burdeaur, the Spanish, or Iland grape, on the Gascoyne, and the Orleance vpon any at all: and these compositions are the best, and bring forth both the greatest and pleasantest grapes: therefore whensoeuer you will graft one grape vpon another, you shall doe it in the beginning of January, in this sort: first, after you haue chosen and trimmed your grafts, which in all sorts must be like the grafts of other fruits, then with a sharpe knife, you shall cleane the head of the Vine, as you doe other stockes and then put in your graft, or eyon, being made as thinne as may be and see that the barkes and sappes ioyne euen and close together, then clay it, mosse it, and couer it, as hath beene before declared.

If your Vine grow too ranke and thicke of leaues, so that the sappe doth waste it selfe in them, and you thereby lose the profit of the fruit, you shall then bare all the rootes of the Vine, and cast away the earth, filling vp the place againe with sand & ashes mingled together: but if the Vine be naturally of it selfe barraine, then with a goudge you shall make a hole halfe way through the maine body of the Vine, and driue into the hole a round pible stone, which although it goe straitly in, yet it may not fill vp the hole, but that the sicke humour of the Vine may passe thorow thereat: then couer the roote with rich earth, and Ore dunge mixt together, and once a day for a month water it with olde pisse, or vrine of a man, and it will make the tree fruitfull: if the Vine be troubled with Wormes, Snailes, Ants, Earewigges, or such like, you shall morning and euening sprinckle it ouer with cowes-pisse and vinegar mixt together & it will helpe it: & thus much for ordering the Vine.

The medicining of the Vine.

The

Chap. IX.

The office of the Fruiterrer, or the Gatherer, and keeper, of Fruit.

After you haue planted euery seuerall quarter, allye, and border within your Orchard, with euery seuerall fruit proper vnto his place, and that you haue placed them in that orderly and comely equipage which may giue most delight to the eye, profit to the trée, and commendations to the workemar, (according to the forme and order prescribed in the first Chapter) and that now the blessing of the highest, time, and your indeuours hath brought forth the haruest and recompence of your trauell, so that you behould the long-expected fruit hang vpon the trées, as it were in their ripenesse, wooing you to plucke, tast, and to deliuer them from the wombes of their parents, it is necessary then that you learne the true office of the Fruiterer, who is in due season and time to gather those fruits which God hath sent him: for as in the husbanding of our grayne if the Husbandman be neuer so carefull, or skilfull, in ploughing, dungging, sowing, weeding and preseruing his crop, yet in the time of haruest be negligent, neither regarding the strength or ripnesse thereof, or in the leading and mowing respects not whether it be wet or dry, doth in that moments space lose the wages of his whole yéres trauell, getting but durt from durt, and losse from his negligence: so in like case houlds it with all other fruits, if a man with neuer so great care and cost procure, yet if he be inrespectiue in the gathering, all his former busnesse is vaine and to no purpose; and therefore I hould nothing more necessary then the relation of this office of the Fruiterer, which is the consummation and onely hope of our cost, and diligence, teaching vs to gather wisely what wee haue planted wearily,

wearily, and to eate with contentment what we haue pre-
serued with care.

Know then, that of all fruits (for the most part) the Cherry is the soonest ripe, as being one of the oldest children of the summer, and therefore first of all to be spoken of in this place, yet are not all Cherries ripe at one instant, but some sooner then other some, according to the benefit of the Sunne, the warmth of the ayre, and the strength of sappe in the branch on which the Cherry hangeth: they are a fruit tender and pleasant, and therefore much subiect to be deuoured and consumed with Byrds of the smallest kindes, as Sparrowes, Robins, Starlings, and such like, especially the Jay, and the Bull-finch, who will deuoure them stones and all, euen so fast as they ripen: for preuention whereof; if you haue great abundance of Cherry trees, as maine holts that be either one or many akers in compasse, you shall then in diuers places of your holts, as well in the midst, as out-corners, cause to be erected vp certaine long poales of Fyrre, or other woode, which may mount somewhat aboue the toppes of the trees, and one the toppes of those poales you shall place certaine clappe-milles made of broken trenchers ioyned together like sayles, which being moued and carryed about with the smallest ayre, may haue vnderneath the sayles a certaine lose little board, against which euery sayle may clap and make a great noyse, which will affright and scare the Byrds from your trees: these milles you shall commonly see in Husbandmens yards placed on their stackes or houells of Corne, which doth preserue them from fowle and vermine: but for want of these clap-milles you must haue some boy or young fellow that must euery morning from the dawning of the day till the Sunne be more then an houre high, and euery euening from fiue of the clocke till nine, runne vp and downe your ground, whooping, showting, and making of a great noyse, or now and then shooting of some Harquebush, or other Peece: but by no meanes to vse slings or throwing of stones, least by the miscarriage

Of gathering and preseruing Cherries.

of his hand hée either beate downe the fruit or bruise the trees. In this sort hauing preserued your Cherries from destruction, you shall then know there ripenesse by their colours, for euer those which are most red, are most ripe, and when you see any that are ripe, you shall take a light ladder, made either of fyrre or sallow, and setting it carefully against the branches, so as you neither bruise them nor the fruit, you shall gather those you finde ripe, not taking the fruit from the stalke, but nipping the stalke and fruit both together from the tree: also you shall be carefull in gathering to handle or touch the Cherry so little as may be, but the stalke onely, especially if your hands be hot, or sweaty, for that will change the colour of your Cherries, and make them looke blacke: if there be any ripe Cherries which hang out of the reach of your hands, then you shall haue a fine small gathering hooke of woode, whose bout shall be made round, and smooth, for nipping the barke of the branches, and with it you shall gently pull vnto you those branches you cannot reach: you shall also haue a little round basket of almost a foote deepe, made with a fine bottome, hauing a handle thwarte the toppe, to which a small hooke being fastned, you shall with that hooke hang the basket by you on some conuenient ci on, and as you gather the Cherries, gently lay them downe into the same, and when you haue filled your basket you shall descend and empty it into larger great baskets made of the same fashion, with fine bottomes, and hauing vnderneath two broad lathes or splinters, at least three fingers broad a peece, within foure inches one of the other, and going both one way crosse ouerthwart the basket, that if either man or woman shall carry them vpon their heads, which is the best manner of cariage, then the splinters may defend the bottome of the basket from the head of the party, and keepe the Cherries from hurt or bruising, and if you haue occasion to carry your Cherries farre, and that the quantitie grow beyond the support of a man, then you shall packe them in hampers or panniers made with

false bottoms like siues, and finely lyned on the out side with white straw, and so being closely trust on each side a Horses-backe, to carry them whether you please. You shall by no meanes suffer your Cherries to lye in any great or thicke heapes one vpon another, but vntill you sell them, or vse them, lay them as thinne as may be, because they are apt of themselues to sweat and catch heate, and that heate doth some depriue them of the glory of their colour. When you gather any Cherries to preserue, you shall gather those which are the greatest, the ripest, you shall pull them from their stalkes one by one, and vse them at furthest within xxiiij. howers after the time they are gotten.

The gathering of stone Fruit.

For the gathering of Plumbes in generall, it is in the same manner as you did gather your Cherries, both with such a like ladder, such a like hooke, and such like vessels, onely some more speciall obseruations are to be obserued in gathering your dainty grafted Plumbes, then of the others, which are of a more hard and induring nature. You shall know then that for gathering of Abricots, Peaches, Date-Plumbes, and such like grafted Plumbes, you shall duely consider when they are perfectly ripe, which you shall not iudge by their dropping from the tree, which is a signe of ouer-much ripenesse, tending to rottennesse, but by the true mixture of their colour, and perfect change from their first complexion: for when you shall perceiue that there is no greenenesse nor hardnesse in their out-sides, no, not so much as at the setting on of the stalke, you may then iudge that they are ready to be gathered, and for a perfecter tryall thereof you may if you please, take one which you thinke ripest from the tree, and opening it if you see the stone comes cleane and dry away and not any of the inpart of the fruit cleauing vnto it, then you may assure your selfe that the fruit is ready to be gathered, which you shall with great deligence and care gather, not by any meanes laying one Plumbe vpon another, but each seuerally by another, for these dainty Plumbes are naturally so tender that the least touch, though of themselues, doth bruise them,

and occasion rottennesse. Now when you haue gathered them, if either you haue desire to send them any iourney, as in gratulation to your friends, or for other priuate commoditie you shall take some close, smooth, bore, answerable to the store of fruit you are to send, and first line it within all ouer with white paper, then lay your Plumbes one by one all ouer the bottome of the bore, then couering them all ouer with white paper, lay as many more vpon the toppe of them, and couer them likewise with paper, as before, and so lay row vpon row with papers betweene them, vntill the bore be sufficiently filled, and then closing it vp sende it whether you please, and they will take the least hurt, whereas if you should line the bore either with hay or straw, the very skinnes are so tender that the straw would print into them and bruise them exceedingly, and to lay any other soft thing about them, as either wooll or bumbast, is exceeding euill, because it heateth the Plumbes, and maketh them sweat, through which they both lose their colour and rot speedily. As touching the gathering of Plumbes when they are hard, and to ripen them afterward by laying them vpon nettles, to which consenteth the most of our London-Fruiterrers, I am vtterly against the opinion, because I both know Nature to be the perfectest worke-Mistris, and where she is abridged of her power there euer to follow disorders and imperfections, as also that when such things are done, as it were through an ouer-hasty constraint, there cannot procede any thing but abortiuenesse, and a distastfull rellish: from whence I thinke it comes to passe that in London a man shall very seldome tast a delicate or well rellisht Plumbe, vnlesse it be from such as hauing fruit of their owne, make no commoditie thereof more then their owne pleasures: yet thus much I would perswade euery one, that if they haue moe Plumbes ripe at once then they can vse, or spend, that then after they are gathered, to spread them thinnely vpon Nettles or Vine-tree leaues, and it will preserue them sound and well coloured a long time together, but if your store be so

Of gathering hard Plumbes.

Of keeping of Plumbes.

so superabundant that in no reasonable time you can spend them, then what you doe not preserue, or make Codlinake, or Maruulade of, the rest you shall take and sprinkling them ouer with Sweet-worte, or growt, and then laying them one by one (yet so as they may not touch one another) vpon hurdles or sleakes made of wands, or twigges, and put them into an Ouen after bread or Pyes haue bene taine thereout, and so leasurely dry them, and they will not onely last, but tast pleasantly all the yeere after: and in this sort you may vse all kindes of Plumbes, or Peares, whatsoeuer. Now for the gathering of the other ordinary sorts of vngrafted Plumbes, which haue both much stronger rindes, and are lesse subiect to rotting, you shall gather them, carry, or transport them, in the same manner that you did your Cherries, onely in these, as in all other sorts of fruit whatsoeuer, you shall not omit neuer to gather, or pull them from the tree, till the dewe be dryed cleane both from the grasse and from the trees, and that the day be dry, faire, and full of sunne-shine: for the least wet or moisture doth canker and rot the fruit.

Of the gathering of Peares.

As touching the gathering of Peares, though sundry Fruiterrers obserue sundry wayes in gathering them, as some making more hast then good-speed, as either to haue the first tast, or the first profit, some vsing more negligence, thincking their store so great it will neuer be consumed, and some so curious that they will not gather till the Peares fall into their bosomes, all which are dispraisable fashions, yet I for my part would euer aduise all diligent husbands to obserue a mediocritie, and take the fittest season for the gathering of his fruit: as thus for example. If because you are vnexperienced or vnacquainted with the fruit you doe not know the due time of his ripening, you shall obserue the colour of the Peare, and if you see it doe alter, either in part, or in all, you shall be assured the fruit is neare ripening, for Peares doe neuer change their colours, but when they doe desire to be taken from the tree: and of all fruit the Peare may be gathered the hardest,

because both his owne naturall heate and peculiar qualitie will ripen him best with lying: yet to be more strongly fortified in the knowledge of the ripenesse of your fruit, and because it is better to get a day too late, then an houer too earely, you shall before you gather your Peares, whether they be Summer fruit or Winter fruit, or whether you meane to spend them sone or preserue them long, take one of them from the tree, which is neither the ripest nor the greenest, but betwixt both, and cut it through the midst with your knife, not longwise, but ouerthwart, and then looke into the coare where the kirnells lye, and if it be hollow so as the kirnells lye as it were hollow therein, the neather ends thereof being turned either blacke, or blackish, albeit the complexion of the Peare be little, or not at all altered, yet the Peares haue their full growth, and may very well be gathered: then laying them either vpon a bedde of ferne, or straw, one vpon another, in great thicknesse, their owne naturall heate will in short space ripen them, which you shall perceiue both by the speedy changing of their colour, & the strength of their smell, which will be exceeding suffocating, which as sone as you perceiue, you shall then spread them thinner and thinner, vntill they be all ripe, and then lay them one by one, in such sort as they may not touch one another, and then they will last much the longer, you shall also after they be ripe, neither suffer them to haue straw nor ferne vnder them, but lay them either vpon some smoth table, boards or sleakes of wands, and they will last the longer.

Of transporting, or carrying of Peares farre.

If you be to carry or transport Peares farre, you shall then gather them so much the sooner, and not suffer any ripe one to be amongst them, and then lyning great wicker baskets (such as will hould at least quarters a peece) finely within with white-straw, fill them vp with Peares, and then couer them with straw, and corde them aboue, and you may either transport them by land or Sea, whether you please, for they will ripen in their cariage: but when you come to your place of residence, then you must needs

nèds vnpacke them and spread them thinner, or else they will rot and consume in a sodaine.

There be sundry wayes of gathering Peares, or other fruit, as namely, to climbe into the trée and to haue a basket with a line fastned thereto, and so when it is filled to let it downe, and cause it to be emptied, which labour though some of our southerne Fruiterers doe not much commend, yet for mine owne part I doe not sée much errour therein, but that it is both allowable and conuenient, both because it neither bruiseth the fruit, nor putteth the gatherer to any extraordinary labour, onely the imaginary euill is, that by climbing vp into the trée, hée that gathereth the fruit may indanger the breaking, slipping, and disbranching of many of the young cyons, which breedeth much hurt and damage to the trée, but iudgement, and care, which ought to be appropriate to men of this qualitie, is a certaine preuenter of all such mischeifes. Now for such as in gathering of their fruit doe euery time that the basket is full bring it downe themselues from the trée, and empty it by powring the fruit rudely, and boystrously forth, or for beating of fruit downe with long poales, loggets, or such like, they are both most vilde and preposterous courses, the first being full of too much foolish and carelesse trouble, the latter of too much disorder, & cruelty, ruyning in a moment what hath bene many yéeres in building: as for the climbing the trée with a ladder, albeit it be a very good way for the gathering of fruit, yet if it be neuer so little indiscretly handled, it as much hazardeth the breaking and bruising both of the fruit and the small cyons, as either climbing the trée, or any other way whatsoeuer. Of gathering diuersly.

Now for the gathering of your Apples: you shall vnderstand that your summer fruit, as your Jeniting, Wilbourne, and such like, are first to be gathered, whose ripenesse, you may partly know by the change of colour, partly by the pecking of Birds, but chiefely by the course formerly discribed for your knowledge of the ripenesse of the Peare, which is the hollownesse of coare, and tiderly of the kirnell The gathering of Apples.

tiedly,

onely, and when you doe perceiue they are ripe, you shall gather them in such wise as hath beene declared for the gathering of your Peares, without respecting the state of the Mone, or any such like obseruation, but when you come to gather your Winter-fruit, which is the Pippin, Pearemaine, Russetting, Blacke-annat, and such like, you shall in any wise gather them in the wane of the Mone, and, as before I said, in the dryest season that may be, and if it be so that your store be so great that you cannot gather all in that season, yet you shall get so much of your principall fruit, the youngest and fairest, as is possible to be gotten, and preserue it for the last which you intend either to spend, or vtter. Now for the manner of gathering your Apples I doe not thinke you can amend or approue a better way then that which hath beene discribed for the gathering of Peares, yet some of our late practitioners (who thinke themselues not cunning if they be not curious) dislike that way, and will onely haue a gathering apron, into which hauing gathered their fruit, they doe empty it into larger vessells: this gathering apron is a strong peece of Canuas at least an ell euery way, which hauing the vpper end made fast about a mans necke, & the neather end with three lopes, that is, one at each corner, & one in the midst, through which you shall put a string, and binde it about your waste, in so much that both the sides of your apron being open you may put your fruit therein with which hand you please: this manner of gathering Apples is not amisse, yet in my conceit the apron is so small a defence for the Apples, that if it doe but knocke against the boughes as you doe moue your selfe, it cannot chuse but bruise the fruit very much, which ought euer to be auoyded: therefore still I am of this opinion, there is no better way, safer, nor more easie, then gathering them into a small basket, with a long line thereat, as hath beene before declared in the gathering of Peares. Now you shall carefully obserue in empting one basket into another, that you doe it so gently as may be, least in powring them out too rudely the stalkes

of

of the fruit doe pricke one another, which although it doe appeare little or nothing at the first, yet it is the first ground, cause, and beginning of rottennesse, and therefore you shall to your vttermost power gather your Apples with as small stalkes as may be, so they haue any at all, which they must needes haue, because that as to bigge stalkes doth pricke and bruise the fruit, so to haue none at all makes the fruit rot first in the place where the stalke should be: you shall also keepe your fruit cleane from leaues, for they being greene and full of moisture, when by reason of their lying close together they beginne to wither they strike such an heate into the Apples, that they mil-dew and rot instantly.

As touching your Fallings, which are those Apples which fall from your trees, either through too much ripenesse, or else through the violence of winde, or tempests, you shall by no meanes match them, or mixe them, with your gathered fruit, for they can by no meanes last or indure so long, for the latter which falleth by force of winde, wanting the true nourishment of the earth and the kindly ripening vpon the tree, must necessarily shrinke wither, and growriuelled, so that your best course is to spend them presently, with all speede possible: for the other which hath too much ripenesse from the earth, and the tree, though it be much better then the other, yet it cannot be long lasting, both because it is in the falling bruised, and also hath too much ripenesse, which is the first steppe to rottennesse, so that they must likewise be spent with all expedition. For the carriage of your Apples, if the place be not farre whether you should carry them, you shall then in those large baskets into which you last emptied them, carry them vpon cole-staues, or stangs, betwixt two men, and hauing brought them carefully into your Apple-loft, power them downe gently vpon bedds of ferne or straw, and lay them in reasonable large heapes, euery sort of Apples seuerall by themselues, without mixture, or any confusion: and for such Apples as you would haue to ripen soone, you

Of Fallings.

Of carriage and keeping Fruit.

shall couer them all ouer with ferne also, but for such as you would haue take all possible leasure in ripening, those you shall lay neither vpon ferne, nor straw, but vpon the bare boards, nay, if you lay them vpon a plaster floare (which is of all floares the coldest) till Saint Andrewes tide, it is not amisse, but very profitable, and the thinner you lay them so much the better. Now if you haue any farre iourney to carry your Apples, either by land, or by water, then trimming and lyning the insides of your baskets with ferne, or wheate-straw wouen as it were cleane through the basket, you shall packe, couer, and cord vp your Apples, in such sort as you did your Peares, and there is no danger in the transportation of them, be it by shippe, cart, waggon, or horse-backe. If you be inforced to packe sundry sorts of Apples in one basket, see that betwixt euery sort you lay a diuision of straw, or ferne, that when they are vnpackt, you may lay them againe seuerally: but if when they are vnpackt, for want of rome you are compeld to lay some sorts together, in any wise obserue to mixe those sorts together which are nearest of taste, likest of colour, and all of one continuance in lasting: as for the packing vp of fruit in hogsheads, or shoting them vnder hatches when you transport them by Sea, I like neither of the courses, for the first is too close, and nothing more then the want of ayre doth rot fruit, the other is subiect to much wet, when the breach of euery Sea indangereth the washing of the Apples, and nothing doth more certainely spoyle them. The times most vnseasonable for the transporting of fruit, is either in the month of March, or generally in any frosty weather, for if the sharpe coldenesse of those ayres doe touch the fruit, it presently makes them looke blacke, and riuelled, so that there is no hope of their continuance.

The place where you shall lay your fruit must neither be too open, nor too close, yet rather close then open, it must by no meanes be low vpon the ground, nor in any place of moistnesse: for moisture breedes fustinesse, and such naughty

maghty smells easily enter into the fruit, and taint the reliſh thereof, yet if you haue no other place but some low cellar to lay your fruit in, then you ſhall raiſe ſhelues round about, the neareſt not within two foote of the ground, and lay your Apples thereupon, hauing them firſt lyned, either with ſweet Rye-ſtraw, Wheate-ſtraw, or dry ferne: as thoſe vndermoſt roomes are not the beſt, ſo are the vppermoſt, if they be vnſeeld, the worſt of all other, becauſe both the ſunne, winde, and weather, peircing through the tiles, doth annoy and hurt the fruit: the beſt roome then is a well ſeeld chamber, whoſe windowes may be ſhut and made cloſe at pleaſure, euer obſeruing with ſtraw to defend the fruit from any moiſt ſtone wall, or duſty mudde wall, both which are dangerous annoyances.

Now for the ſeperating of your fruit, you ſhall lay thoſe neareſt hand, which are firſt to be ſpent, as thoſe which will laſt but till Alhallontide, as the Tiſling, Wibourne, and ſuch like, by themſelues: thoſe which will laſt till Chriſtmas, as the Coſtard, Pome-water, Queene-Apple, and ſuch like: thoſe which will laſt till Candlemas, as the Pome de-roy, Goſe-Apple, and ſuch like, and thoſe which will laſt all the yeere, as the Pippin, Duzin, Ruſſetting, Peare-maine, and ſuch like, euery one in his ſeuerall place, & in ſuch order that you may paſſe from bed to bed to cleanſe or caſt forth thoſe which be rotten or putrefied at your pleaſure, which with all diligence you muſt doe, becauſe thoſe which are tainted will ſoone poyſon the other, and therefore it is neceſſary as ſoone as you ſee any of them tainted, not onely to cull them out, but alſo to looke vpon all the reſt, and deuide them into three parts, laying the ſoundeſt by themſelues, thoſe which are leaſt tainted by themſelues, and thoſe which are moſt tainted by themſelues, and ſo to vſe them all to your beſt benefit. The ſeperating of Fruit.

Now for the turning of your longeſt laſting fruit, you ſhall know that about the latter end of December is the beſt time to beginne, if you haue both got and kept them in ſuch ſort as is before ſayd, and not turn fruit of more

earely ripening amongst them: the second time you shall turne them, shall be about the end of February, and so consequently once euery month, till Penticost, for as the yeare time increaseth in heate so fruit growes more apt to rot: after Whitsontide you shall turne them once euery fortnight, alwayes in your turning making your heapes thinner and thinner; but if the weather be frosty then stirre not your fruit at all, neither when the thaw is, for then the fruit being moist may by no meanes be touched: also in wet weather fruit will be a little dankish, so that then it must be forborne also, and therefore when any such moistnesse happeth, it is good to open your windowes and let the ayre dry your fruit before it be turned: you may open your window any time of the yeare in open weather, as long as the sunne is vpon the skye, but not after, except in March onely, at what time the ayre and winde is so sharpe that it taineth and riuelleth all sorts of fruits whatsoeuer.

To keepe Fruit in frost. If the frost be very extreame, and you feare the indangering your fruit, it is good to couer them somewhat thicke with fine hay, or else to lay them couered all ouer either in Barley-chaffe, or dry Salte: as for the laying them in chests of Juniper, or Cipresse, it is but a toy, and not worth the practise: if you hang Apples in nettes within the ayre of the fire it will keepe them long, but they will be dry and withered, and will lose their best rellish.

Of Wardens. Now for the gathering, keeping, ordering, and preseruing of Wardens, they are in all sorts and in all respects to be vsed as you doe vse your Peares, onely you are to consider that they are a fruit of a much stronger constitution, haue a much thicker skinne, and will endure much harder season: neither ought you to seeke to ripen them in hast, or before the ordinary time of their owne nature, and therefore to them you shall vse neither straw, ferne, nor hay, but onely dry boards to lay them vpon, and no otherwise.

Of Medlars and Seruices. For your Medlars, you shall gather them about the midst of October, after such time as the frost hath nipt and bitten

bitten them, for before they will not be ready, or loosen from the stalke, and then they will be nothing ripe, but as hard as stones, for they neuer ripen vpon the tree, therefore as soone as you haue gathered them, you shall packe them into some close vessell, and couer them all ouer, and round about, with thicke woollen cloathes, and about the cloathes good store of hay, and some other waight of boards, or such like vpon them, all which must bring them into an extreame heate, without which they will neuer ripen kindely, because their ripenesse is indeed perfect rottennesse: and after they haue layne thus, at least a fortnight, you shall then looke vpon them, and turning them ouer, such as you finde ripe you shall take away, the rest you shall let remaine still, for they will not ripen all at once, and those which are halfe ripe you shall also remoue into a third place, least if you should keepe them together, they should beginne to grow mouldy before the other were ready; and in the selfe same manner as you vse your Medlars, so you shall vse your Seruices, and they will ripen most kindely: or if you please to sticke them betwixt large clouen stickes, and to sprinckle a little olde beare vpon them, and so set them in a close roome, they will ripen as kindely as any other way whatsoeuer.

Now for Quinces, they are a fruit which by no meanes you may place neare any other kinde of fruit, because their sent is so strong and peircing, that it will enter into any fruit, and cleane take away his naturall rellish: the time of their gathering is euer in October, and the meetest place to lay them in is where they may haue most ayre, so they may lye dry (for wet they can by meanes indure,) also they must not lye close, because the smell of them is both strong & vnwholsome: the beds whereon they must lye must be of sweet straw, and you must both turne them and shift them very often, or else they will rot speedily: for the transporting or carying them any long iourney, you must vse them in all things as you vse your Peares, & the carriage will be safe. Of Quinces.

For Nuts, of what sort soeuer they be, you shall knew Of Nuts.

they are ripe as soone as you perceiue them a little browne within the huske, or as it were ready to fall out of the same, the shell therefore in preseruing of them long from drynesse, is all that can be desired at the Fruiterers hands: for as touching the gathering of them, there is no scruple to be obserued, more then to gather them cleane from the tree, with the helpe of hookes and such like, for as touching the bruising of them, the shell is defence sufficient. After they be gathered, you shall shale them, and take them cleane out of their huskes, and then for preseruing them from either Wormes or drynesse, it shall be good to lay them in some low cellar, where you may couer them with sand, being first put into great bagges or bladders: some French-men are of opinion that if you put them into vessels made of Wal-nut-tree, and mixe Iuy-berries amongst them, it will preserue them moist a long time: others thinke, but I haue found it vncertaine, that to preserue Nuts in Honey will keepe them all the yeere as greene, moist, and pleasant, as when they hung vpon the tree: The Dutch-men vse (and it is an excellent practise) to take the crusht Crabbes (after your verdiuyce is strained out of them) and to mixe it with their Nuts, and so to lay them in heapes, and it will preserue them long: or otherwise if they be to be transported, to put them into barrells and to lay one layer of crusht Crabbes, and another of Nuts, vntill the barrell be filled, and then to close them vp, and set them where they may stand cole. But aboue all these foresayd experiments, the best way for the preseruing of Nuts is to put them into cleane earthen pots, and to mixe with them good store of salt and then closing the pots close, to set them in some cole cellar, and couer them all ouer with sand, and there is no doubt but they will keepe cole, pleasant, and moist, vntill new come againe, which is a time fully conuenient.

Of Grapes. Now to conclude, for the keeping of Grapes, you shall first vnderstand that the best time for their gathering is in the wane of the Mone, and about the midst of October,

as

as for the knowledge of his ripenesse it is euer at such time as his first colour is cleane altered, for all Grapes before they be ripe are of a deepe, thicke, greene, colour, but after they be ripe, they are either of a blewish reede, or of a bright shining pale greene. Now for the preseruing them for our eng'lish vse, which is but onely for a fruit-dish at our Tables, for neither our store, nor our soyle, affords vs any for the wine-presse, some thinke it good, after they are gotten, to lay them in fine dry sand, or to glasse them vp in close glasses, where the ayre cannot peirce, will keepe them long, both full, plumpe, and sweet, but in my conceit the best course is after they are gotten to hang them vpon strings bunch by bunch, in such places of your house as they may take the ayre of the fire, and they will last longest, and keepe the sweetest.

Chap. X.

Of the making of Cyder, or Perry.



Cyder is a certaine liquor or drinke made of the iuyce of Apples, and Perrye the like, made of Peares, they are of great vse in France, and very wholsome for mans body, especially at the Sea, and in hot Countries: for they are cole and purgative, and doe preuent burning agues: with vs here in England Cyder is most made in the West parts, as about Deuon-shire & Cornwaile, & Perry in Worcester-shire, Glocester-shire, & such like, where indeede the greatest store of those kindes of fruits are to be found: the manner of making them is, after your fruit is gotten, you shall take euery Apple, or Peare, by it selfe, and looking vpon them, picke them cleane from all manner of filthinesse, as bruisings, rottennesse, wormeeating, and such like, neither leaue vpon them any stalkes, or the blacke buddes which are and grow vpon the tops of the fruit, which done you shall put them in to some very

very cleane vessell, or trough, and with beetells, made for the purpose, bruise or crush the Apples or Peares in peeces, & so remoue them into other cleane vessells, till all the fruit be bruised: then take a bagge of hayre-cloath, made at least a yard, or three quarters, square, and filling it full of the crusht fruit, put it in a presse of woode, made for the purpose, and presse out all the iuyce and moisture out of the fruit, turning and tossing the bagge vp and downe, vntill there be no more moisture to runne forth, and so baggefull after baggefull cease not vntill you haue prest all: wherein you are especially to obserue, that your vessells into which you straine your fruit be exceeding neate, sweet, and cleane, and there be no place of ill sauour, or annoyance neare them, for the liquour is most apt, especially Cyder, to take any infection. As soone as your liquour is prest forth and hath stood to settle, about twelue houres, you shall then turne it vp into sweet hogsheads, as those which haue had in them last, either White-wine or Clarret, as for the Sacke vessell it is tollerable, but not excellent: you may also if you please make a small long bagge of fine linnen cloath, and filling it full of the powder of Cloues, Mace, Cynamon, Ginger, and the dry pils of Lemons, and hang it with a string at the bung-hole into the vessell, and it will make either the Cyder, or Perry, to tast as pleasantly as if it were Renish-wine, and this being done you shall clay vp the bung-hole with clay and salt mixt together, so close as is possible. And thus much for the making of Perry or Cyder.

Of

Chap. XI.

Of the Hoppe-garden, and first of the ground and situation thereof.

That the Hoppe is of great vse and commoditie in this kingdome, both the Beare, which is the generall and perfect drinke of our Nation, and our dayly traffique, both with France, the low-Countries, and other nations, for this commoditie, is a continuall testimony, wherefore the first thing to be considered of in this worke, is the goodnesse and aptnesse of the ground for the bringing forth of the fruit thereof, wherein I thus farre consent with Maister Scot, that I doe not so much respect the writings, opinions, and demonstrations, of the Greeke, Latine, or French authors, who neuer were acquainted with our soyles, as I doe the dayly practise and experience which I collect, both from my owne knowledge, and the labours of others my Countrymen, best seene and approued in this Art: therefore to come to my purpose, you shal vnderstand that the light sand, whether it be redde or white, being simple and vnmixed is most vnfit for the planting of Hoppes, because that through the barrainenesse, it neither hath comfort for the rote, nor through his seperate lightnesse, any strong hould to maintaine and keepe vp the poales: likewise the most fertill rich, blackeclay, which of all soyles is the best and most fruitfull, is not to be allowed for a Hoppe garden, because his fatnesse and iuyce is so strong that the rote being as it were ouer-fedde, doth make the branches bring forth leaues in such infinite abundance that they leaue neither strength nor place for the fruit, either to knit, or put forth his treasure, as I haue seene by experience in many places: as for the earth which is of a moyst, blacke, wet nature, and lyeth low, although I haue often times seene good Hoppes to grow thereupon, being well trenched, and the

Fit ground for Hoppes.

hils cast high to the best aduantage, yet it is not the principall ground of all others, because it is neuer long lasting, but apt to decay and grow past his strength of bearing. The grounds then which I haue generally scene to beare the best Hoppes, and whose natures doe the longest continue with such fruit, are those mixt earthes which are clayes with clayes, as blacke with white, or clayes and sands of any sorts, wherein the soyle is so corrected as neither too much fatnesse doth suffocate, nor too much leannesse doth pine: for I had euer rather haue my Hoppe-garden desire increase, then continually labour in abatement. And although some doe exceedingly condemne the chalke-ground for this vse, yet I haue not at any time scene better Hoppes, or in more plenty, then in such places, as at this day may be scene in many places about Hartford-shire. To conclude, though your best mixt earths bring forth the best Hoppes, yet there is no soyle, or earth, of what nature soeuer it be (if it lye free from inundation) but will bring forth good Hoppes, if it be put into the hands of an experienced workman.

Of the Situation.

Now, for the situation or site of your Hoppe-garden: you shall so neare as you can place it neare some couer or shelter, as either of hils, houses, high-walles, woodes or trées, so those woodes or trées be not so neare that they may drop vpon your Hoppe hils, for that will kill them: also the nearer it is planted to your dwelling house it is so much the better, both because the vigilance of your owne eye is a good guarde thereunto, and also the labours of your work-Maister will be more carefull and diligent. A Hop-garden as it delighteth much in the pleasantnesse of the sunne, so it cannot endure by any meanes, the sharpenesse of the windes, frosts, or Winter weather, and therefore your onely care is your defence and shelter. For the bignesse of your ground, it must be ordered according to your abilitie or place of trade for that commoditie, for if you shall haue them but for your owne vse, then a rode or two rodes will be inough, albeit your house keeping match

with

with Nobilitie: but if you haue them for a more particuler profit, then you may take an Aker, two or three, according to your owne discretion; wherein you shall euer keepe these obseruations: that one mans labour cannot attend aboue two thousand fiue hundred hils, that euery rode will beare two hundred and fiftie hils, euery hill beare at least two pounds and an halfe of Hoppes, (which is the least quantitie that will serue to brew one quarter of Malt) and that euery hundred waight of Hoppes, is at the least, in a reasonable yeere, worth foure-nobles the hundred: so that euery rode of ground thus imployed, cannot be lesse worth, at the meanest reckoning, then fiue pounds by the yeere: for if the ground be principall good for the purpose, and well ordered, the profit will be much greater, in as much as the bells of the Hoppes will be much greater, full, and more waighty: And thus much for the ground and situation.

Chap. XII.

Of the ordering of the Garden, and placing of the Hils.

AS soone as you haue chosen out your platforme of ground, you shal either by ploughing, or digging, or by both, make it as flat & leuell as is possible, vnlesse it be any thing subiect vnto water, and then you shall giue it some small desent, and with little trenches conuaye the water from annoying it: you shall also the yeere before you either make hill or plant it with Hoppe rootes, sowe it all ouer with hempe, which will not onely kill, and stifle all sorts of weeds, but also rot the greene-swarth, and make the mould mellow, and apt to receiue the rootes when they come to be planted.

Now, as soone as your ground is thus prepared, you shall then take a line, and with it measure your ground

ouerthwart, and to euery hill allow at least three foote of ground euery way, and betwixt hill and hill, at the least fiue foote distance: and when you haue marked thus the number of thirty or forty places, where your hils shall be placed, intending euer that the time of yeere for this worke must be about the beginning of Aprill, you shall then in the center, or midde part of these places made for the site of your hils, digge small square holes of a foote square each way, and a full foote deepe, and in these holes you shall set your Hoppe-rootes, that is to say, in euery hole at least three roots, and these three roots you shall ioyne together in such wise that the toppes of them may be of one equall height, and agreeing with the face or vpper part of the earth, you shall set them straight and vpright, and not seperating them, as many doe, and setting at each corner of the hole a roote, neither shall you twist them, and set both ends vpward, nor lay them flat or crosse-wise in the earth, neither shall you make the hils first and set the roots after, nor immediatly vpon the setting cast great hils vpon them, all which are very vilde wayes for the setting of Hoppes, but, as before I sayd, hauing ioyned your roots together, you shall place them straight and vpright, and so holding them in one hand, with the other put the mould close, firme, and perfectly about them, especially to each corner of the hole, which done you shall likewise couer the sets themselues all ouer with fine mould, at least two fingers thicke, and in this sort you shall plant all your garden quite ouer, making the sites for your hill to stand in rowes and rankes, in such order that you may haue euery way betweene the hils small alleyes and passages, wherein you may goe at pleasure from hill to hill, without any trouble or annoyance, according to that forme which I haue before prescribed touching the placing of your Apple-trees in each seuerall quarter in your Orchard: and herein you are to vnderstand, that in this first yeere of planting your Hoppe-garden you shall by no meanes fashion or make any great hils, but onely raise that part of the earth where

your

your plants are set, some two or three fingers higher then the ordinary ground.

Now before I proceede any further, I thinke it not amisse to speake some thing touching the choise, gathering and trimming of Hoppe-roots: wherefore you shall vnderstand that about the latter end of March is the best gathering of Hoppe-roots, which so neare as you can you shall select out of some garden of good reputation, which is both carefully kept, and by a man of good knowledge, for there euery thing being preserued in his best perfection, the roots will be the greatest and most apt to take: and in the choise of your roots you shall euer chuse those which are the greatest, as namely, such as are at the least three or foure inches about, & ten inches long, let euery roote containe about three ioynts, and no more, and in any case let them be the eyons of the last yeeres growth: if they be perfectly good they haue a great greene stalke with redde streakes, and a hard, broad, long, greene, bell; if they be otherwise, as namely, wilde-Hoppes, then they are small and slender, like thriddes, their colour is all redde, euen when it is at least three yards high, whereas the best Hoppe carieth his reddish colour not three foote from the earth. Now hauing gotten such roots as are good and fit for your purpose, if the season of the weather, or other necessitie hinder you from presently setting them, you shall then either lay them in some puddle, neare to your garden, or else bury them in the ground, vntill fit time for their planting: and of the two it is better to bury them then lay them in puddle, because if you so let them lye aboue xviij. houres, the roots will be spoyled. The choise of Roots.

Now after you haue in manner aforeshewed, planted your garden with roots, it shall not be amisse, if the place be apt to such annoyance, to pricke vpon the site of euery hill a few sharpe Thornes to defend them from the scratching of poultry, or such like, which euer are busie to doe mischiefe: yet of all house-fowle Geese be the worst, but if your fence be as it ought, high, strong, and close, it will both preuent their harme and this labour.

Of Poales.

Next vnto this worke is the placing of Poales, of which we will first speake of the choise thereof, wherein if I dissent from the opinion of other men, yet imagine I set downe no Oracle, but referre you to the experience of the practise, and so make your owne discreation the arbiter betweene our distentions. It is the opinion of some, that Alder-poales are most proper and fit for the Hoppe-garden, both that the Hoppe taketh, as they say, a certaine naturall loue to that wood, as also that the roughnesse of the rinde is a stay & benefit to the growth of the Hoppe: to all which I doe not disagree, but that there should be found Alder-poales of that length, as namely, xvj. or xvij. foote long, nine, or ten, inches in compasse, and with all rust, growne, straight, and fit for this vse, seemeth to mee as much as a miracle, because in my life I haue not beheld the like, neither doe I thinke our kingdome can affoorde it, vnlesse in some such especiall place where they are purposely kept and maintained, more to shew the art of their maintenance, then the excellency of their natures: in this one benefit, and doubtlesse where they are so preserued, the cost of their preseruation amounteth to more then the goodnesse of their extraordinary qualitie, which mine author defends to the contrary, giuing them a larger prerogatiue, in that they are cheaper to the purse, more profitable to the plant, and lesse consumption to the common-wealth: but I greatly doubt in the approbation, and therefore mine aduise is not to rely onelye vpon the Alder, and for his preheminence imagine all other poales insufficient: but be assured that either, the Oake-poale, the Ashe, the Beeche, the Aspe, or Maple, are euery way as good, as profitable, and by many degrees much longer lasting.

Now, if it be so that you happen to liue in the champian Country, as for the most part Northampton shire, Oxford-shire, some parts of Leycester and Rutland are, or in the wet and low Countries, as Holland, and Kesten in Lincolne-shire, or the Ile of Elye in Cambridge-shire, all which places are very barraine of wood, and yet excellent

lent poples to beare Hoppes, rather then to lose the commoditie of the Hoppe-garden I wish you to plant great store of Willowes, which will afforde you poales as sufficient as any of the other whatsoeuer, onely they are not so long lasting, and yet with carefull and dry keeping, I haue seene them last full out seauen yeeres, a time reasonably sufficient for any young wood, for such a vse. Thus you see the curiositie is not very great of what wood so euer your poale be, so it be of young and cleane growth, rush-growne, (that is to say, biggest at the neather end) eight-teene foote in length, and ten inches in compasse. These poales you shall cut and prepare betwixt the feast of All-Saints, and Christmas, and so pile them vp in some dry place, where they may take no wet, vntill it be midde-Aprill, at which time (your Hoppes being shot out of the ground at least three quarters of a yarde, so that you may discerne the principall eyons which issue from the principall rootes) you shall then bring your poales into the garden, and lay them along in the alleyes, by euery hill so many poales as shall be sufficient for the maine branches, which happely the first yeere will not be aboue two or three poales at the most to a hill, but in processe of time more, as foure or fiue, according to the prosperitie of the plants, and the largenesse of the hils. After you haue thus layd your poales, you shall then beginne to set them vp in this sort: first, you shall take a gaine-locke, or crow of iron, and strike it into the earth so neare vnto the roote of the Hoppe as is possible, prouided alwayes that you doe not bruise, or touch the roote, and so stroake after stroake, cease not striking till you haue made a hoale at least two foote deepe, and make them a little slantwise inward towards the hill, that the poales in their standing may shoote outwards and hould their greatest distance in the toppes: this done you shall place the poales in those hoales, thus made with the iron crow, and with another peece of wood, made rammer-wise, that is to say, as bigge at the neather end as the biggest part of the poale, or somewhat more,

The proportion of the Poale.

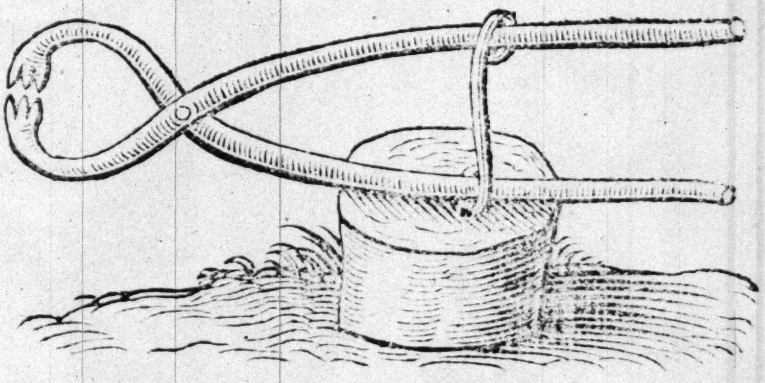
Of cutting and erecting Poales.

you

you shall ramme in the poales, and beate the earth firme and hard about them: alwayes prouided, that you touch not any branch, or as little as you may beate with your rammer within betweene the poales, onely on the out-side make them so fast that the winde, or weather, may not disorder or blow them downe: then lay to the bottome of euery poale the branch which shall ascend it, and you shall see in a short space, how out of their owne natures, they will imbrace and climbe about them.

Now, if it happen after your Hoppes are growne vp, yet not come to their full perfection, that any of your poales chance to breake, you shall then take a new poale, and with some soft greene rushes, or the inmost greene barke of an Alder-tree, tye the toppe of the Hoppe to the toppe of the new poale, then draw the broken poale out of the Hoppe (I meane that part which being broken lyeth vpon the ground) and as you saw it did winde about the olde poale (which is euer the same way that the sunne runnes) so you shall winde it about the new poale: then loosening the earth a little from the neather part of the broken poale, you may with your owne strength pull it cleane out of the earth, and place the new poale in his roome. Now, there be some which are exceeding curious in pulling vp these olde poales, and rather then they will shake the earth, or loosen the mould, they will make a paire of large pincers, or tarriers of iron, at least fiue foote long with sharpe teeth, and a clasping hooke, to hould the teeth together, when they haue taken fast hould vpon the poale so neare the earth as is possible, and then laying a peice of wood vnder the tarriers, and poysing downe the other ends to rest the poale out of the earth without any disturbance, the modell or fashion of which instrument is contained in this figure:

This

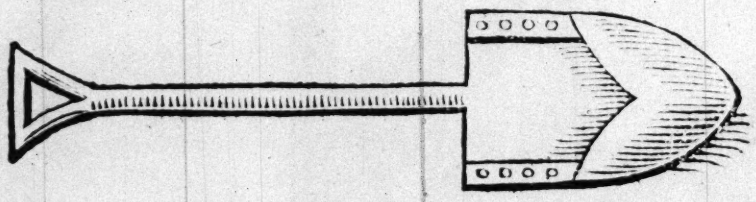


This inſtrument is not to be diſcommended, but to be held of good vſe, either in binding grounds where the earth hardneth and houldeth the poale more then faſt, or in the ſtrength and heate of ſummer, when the dryneſſe of the mould will by no meanes ſuffer the poale to part from it: but otherwiſe it is needleſſe and may without danger be omitted.

As ſoone as you haue ſufficiently ſet euery hill with poales, and that there is no diſorder in your worke, you ſhall when the Hoppes beginne to climbe, note if their be any cyons or branches which doe forſake the poales, and rather ſhoote alongſt the ground then loke vp to their ſupporters, and all ſuch as you ſhall ſo finde, you ſhall as before I ſayd, either with ſoft greene ruſhes, or the greene barke of Elder, tye them gently vnto the poales, and winde them about, in the ſame courſe that the ſunne goes, as oft as conueniently you can: and this you ſhall doe euer after the dew is gone from the ground, and not before, and this muſt be done with all poſſible ſpeede, for that cyon which is the longeſt before it take vnto the poale is euer the worſt and brings forth his fruit in the worſt ſeaſon.

Now, as touching the making of your hils, you ſhall vnderſtand that although generally they are not made the firſt yeare, yet it is not amiſſe if you omit that ſcruple, and Of the Hils.

beginne to make your hils as soone as you haue placed your poales, for if your industry be answerable to the desert of the labour, you shall reape as good profit the first yeare, as either the second or the third. To beginne therefore to make your hils, you shall make you an instrument like a stubbing Hoe, which is a tole wherewith labourers stubbe rootes out of decayed woode-land grounds, onely this shall be somewhat broader and thinner, somewhat in fashion (though twice so bigge) vnto a Coopers Adzes, with a shaft at least foure foote long: some onely for this purpose vse a fine paring spade, which is euery way as good, and as profitable, the fashion of which is in this figure.



With this paring spade, or hoe, you shall pare vp the greene-swarth and vppermost earth, which is in the alleyes betweene the hils, and lay it vnto the rootes of the Hoppes, raising them vp like small Mole-hils, and so monthly increasing them all the yeare through, make them as large as the site of your ground will suffer, which is at least foure or fiue foote ouerthwart in the bottome, and so high as conuenently that height will carry: you shall not by any meanes this first yeare decay any eyons or branches which spring from the hils, but maintaine them in their growth, and suffer them to climbe vp the poales, but after the first yeare is expired you shall not suffer aboue two or three eyons, at the most, to rise vpon one poale. After your hils are made, which as before I sayd would be at least foure or fiue foote square in the bottome, and three foote high, you shall then diligently euery day attend your garden, and if you finde any branches that being risen more

then

then halfe way vp the poales, doe then forſake them and ſpread outward, dangling downe, then you ſhall either with the helpe of a high ſtoole, on which ſtanding you may reach the toppe of the poale, or elſe with a ſmall forckt ſticke, put vp the branch, and winde it about the poale: you ſhall alſo be carefull that no weeds or other filthineſſe grow about the rootes of your Hoppes to choake them, but vpon the firſt diſcouery to deſtroy them.

Chap. XIII.

Of the gathering of Hoppes, and the preſeruing of the Poales.

TOuching the gathering of Hoppes you ſhall vnderſtand that after Saint Margarets day they beginne to bloſſome, if it be in hot and rich ſoyles, but otherwiſe not till Lammas: likewiſe in the beſt ſoyles they bell at Lammas, in the worſt at Michaelmas, and in the beſt earth they are full ripe at Michaelmas, in the worſt at Martillmas; but to know when they are ripe indeede, you ſhall perceiue the ſeede to loſe his greene colour, and loke as browne as a Hares backe, wherefore then you ſhall with all dilligence gather them, and becauſe they are a fruit that will endure little or no delay, as being ready to fall as ſoone as they be ripe, and becauſe the exchange of weather may breede change in your worke, you ſhall vpon the firſt aduantage of faire weather, euen ſo ſoone as you ſhall ſée the dewe exhaled and drawne from the earth, get all the ayde of Men, Women, and children which haue any vnderſtanding, to helpe you, and then hauing ſome conuenient empty barne, or ſheede, made either of boards or canuas, neare to the garden, in which you ſhall pull your Hoppes, you ſhall then beginne at the neareſt part of the garden, and with a ſharpe garden knife cut the ſtalkes of the Hoppes aſunder

close by the toppes of the hils; and then with a sharpe forke of iron, made broad and sharpe for the purpose, shere by all the Hoppes, and leaue the poales naked. Then hauing labouring persons for the purpose, let them cary them vnto the place where they are to be pild; and in any case cut no more then presently is caryed away as fast as they are cut, least if a shower of raine should happen to fall, and those being cut and taking wet, are in danger of spoyling. You shall prouide that those which pull your Hoppes be persons of good discretion, who must not pull them one by one, but stripe them roundly through their hands into baskets, mixing the young budds and small leaues with them, which are as good as any part of the Hoppe whatsoeuer. After you haue pulled all your Hoppes and carried them into such conuenient dry rooms as you haue prepared for that purpose, you shall then spread them vpon cleane floares, so thinne as may be, that the ayre may passe thorrow them, least lying in heapes they sweat, and so mould, before you can haue leasure to dry them. After your Hoppes are thus ordered, you shall then cleanse your garden of all such Hoppe-straw, and other trash, as in the gathering was scattered therein: then shall you plucke vp all your Hoppe-poales, in manner before shewed, and hauing either some dry bearded house, or shed, made for the purpose, pile them one vpon another, safe from winde or weather, which howsoeuer some that would haue their experience, like a Collossus, seeme greater then it is, doe disallow, yet it is the best manner of keeping of poales, and well worthy the charge: but for want of such a house, it shall not be amisse to take first your Hoppe-straw, and lay it a good thicknesse vpon the ground, and with fire strong stakes, driuen slant-wise into the earth, so as the vppermost ends may be inward one to another, lay then your Hoppe-poales betweene the stakes, and pile them one vpon another, drawing them narrower and narrower to the top, and then couer them all ouer with more Hoppe-straw, and so let them rest till the next March, at which

time

time you shall haue new occasion to vse them.

As soone as you haue pild vp your Hoppe-poales, dry and close, then you shall about mid-November following throw downe your hils, and lay all your rootes bare, that the sharpenesse of the season may nip them, and keepe them from springing too early: you shall also then bring into the garden olde Cow-dunge, which is at least two yeeres olde, for no new dunge is good, and this you shall lay in some great heape in some conuenient place of the garden vntill Aprill, at which time, after you haue wound your Hoppes about your poales, you shall then bestow vpon euery hill two or three spade-full of the Manure mixt with earth, which will comfort the plant and make it spring pleasantly. Winter busines.

After your hils are puld downe, you shall with your garden spade, or your hoe, vndermine all the earth round about the roote of the Hoppe, till you come to the principall rootes thereof, and then taking the youngest rootes in your hand, and shaking away the earth, you shall see how the new rootes grow from the olde sets, then with a sharpe knife cut away all those rootes as did spring the yeere before, out of your sets, within an inch and an halfe of the same, but euery yeere after the first you shall cut them close by the olde rootes. Now, if you see any rootes which doe grow straight downward, without ioynts, those you shall not cut at all, for they are great nourishers of the plant, but if they grow outward, or side-wayes, they are of contrary natures, and must necessarily be cut away. If any of your Hoppes turne wilde, as oft it happens, which you shall know by the perfect redneſſe of the branch, then you shall cut it quite vp, and plant a new roote in his place. After you haue cut and trimmed all your rootes, then you shall couer them againe, in such sort as you were taught at the first planting them, and so let them abide till their due time for poaling.

Chap. XIIII.

Of drying, and not drying of Hoppes, and of packing them when they are dried.



Although there be much curiositie in the drying of Hoppes as well in the temperature of heate (which having any extremitie, as either of heate, or his contrary, breedeth disorder in the worke) as also in the framing of the Oast or furnace after many new moulds and fashions, as variable as mens wits and experiences, yet because innouations and incertainty doth rather perplexe then profit, I will shunne, as much as in me lyeth, from loading the memory of the studious Husbandman with those stratagems which disable his vnderstanding from the attaining of better perfection, not disalowing any mans approued knowledge, or thinking that because such a man can mend smoking Chimneys, therefore none but hee shall haue license to make Chimneys, or that because some men can melt Mettall without winde, therefore it shall be vtterly vnlawfull to vse bellowes: these violent opinions I all together disacknowledge, and wish euery one the liberty of his owne thoughts, and for mine English Husband, I will shew him that way to dry his Hoppes which is most fit for his profit, safe, easie, and without extraordinary expences.

First then to speake of the time which is fittest for the drying of your Hoppes, it is immediately as soone as they are gotten, if more vrgent occasions doe not delay the businesse, which if they happen, then you haue a forme before prescribed how to preserue them from mouldinesse and putrifaction till you can compasse fit time to effect the worke in. The manner of drying them is vpon a Kilne, of which there be two sorts, that is to say, an English Kilne, and a French Kilne: the English Kilne being composed of wood, lath,

lath, and clay, and therefore subiect to some danger of fire, the French, of bricke, lime, and sand, and therefore safe, close, and without all perill, and to be preferred much before the other: yet because I haue hereafter more occasion to speake of the nature, fashion, and edifice of Kilnes in that part of this Volumne where I intreate of Malting, I will cease further to mention them then to say that vpon a Kilne is the best dryng your Hoppes, after this manner, hauing finely bedded your Kilne with Wheate straw, you shall lay on your hayre cloath, although some disallow it, but giue no reason therefore, yet it cannot be hurtfull in any degree, for it neither distasteth the Hoppes, nor defendeth them from the fire, making the worke longer then it would, but it preserueth both the Hoppes from filthynesse, and their seede from losse: when your hayre-cloath is spread you shall cause one to deliuer you vp your Hoppes in baskets, which you shall spread vpon the cloath, all ouer the Kilne, at the least eight inches thicke, and then comming downe, and going to the hole of the Kilne, you shall with a little dry straw kindle the fire, and then maintaining it with more straw, you shall keepe a fire a little more feruent then for the dryng of a kilne-full of Malt, being assured that the same quantitie of fuell, heate, and time, which dryeth a kilne-full of Malt, will also dry a kilne-full of Hoppes, and if your Kilne will dry twenty strikes, or bushels of Malt at one dryng, then it will dry forty of Hoppes, because being layd much thicker the quantitie can be no lesse then doubled, which is a speede all together sufficient, and may very well serue to dry more Hoppes then any one man hath growing in this kingdome.

Now, for as much as some men doe not allow to dry Hoppes with straw, but rather preferre wood, and of wood still to chuse the greenest, yet I am of a contrary opinion, for I know by experience that the smoake which proceedeth from wood, (especially if it be greene wood) being a strong and sharpe vapour, doth so taint and infect the Hoppes that when those Hoppes come to be brewed

with,

with, they giue the drinke a smoakie taste, euen as if the Malt it selfe had beene wood-dryed: the vnpleasantnesse whereof I leaue to the iudgement of them that haue trauelled in Yorke-shire, where, for the most part, is nothing but wood dryed Malt onely.

That you may know when your Hoppes are dry inough, you shall take a small long sticke, and stirring the Hoppes to and fro with it, if the Hoppes doe russell and make a light noyse, each as it were seperating one from another, then they are altogether dry inough, but if in any part you finde them heauy or glewing one to another, then they haue not inough of the fire: also when they are sufficiently and moderately dryed they are of a bright-browne colour, little or nothing altered from that they held when they were vpon the stalke, but if they be ouer dryed, then their colour will be redde: and if they were not well ordered before they were dryed, but suffered either to take wet or mould, then they will looke blacke when they are dry.

Of the drying Hoppes.

There be some which are of opinion that if you doe not dry your Hoppes at all, it shall be no losse, but it is an errour most grose, for if they be not dryed, there is neither profit in their vse, nor safty in preseruing them.

As soone as your Hoppes are sufficiently dryed, you shall by the plucking vp of the foure corners of your hayre-cloath thrust all your Hoppes together, and then putting them into baskets, carry them into such dry places as you haue prepared of purpose to lay them in, as namely, either in dry-fats, or in garners, made either of plaster, or boards: and herein you shall obserue to packe them close and hard together, which will be a meanes that if any of them be not dry, yet the heate they shall get by such lying will dry them fully and make them fit for seruice.

Of packing Hoppes.

Now to conclude, if your store of Hoppes be so great that you shall trade or make Marchandize of them, then either to conuay them by land or Sea, it is best that you packe them into great bagges of canuas, made in fashion of those bagges which Wole-men vse, and call them pockets, but

but not being altogether so large: these bagges you shall open, and either hang vp betweene some crosse-beames, or else let downe into some lower floare, and then putting in your Hoppes cause a man to goe into the bagge and tread downe the Hoppes, so hard as is possible, pressing downe basket-full after basket-full, till the bagge be filled, euen vnto the toppe, and then with an extraordinary packe-thriede, sowing the open end of the bagge close together, let euery hollow place be crammed with Hoppes, whilst you can get one hand-full to goe in, and so hauing made euery corner strong and fast, let them lye dry till you haue occasion either to shippe or cart them. And thus much for the ordering of Hoppes, and their vses.

Chap. XV.

The office of the Gardiner, and first of the Earth, Situation, and fencing of a Garden for pleasure.

There is to be required at the hands of euery perfect Gardiner three especiall vertues, that is to say, Diligence, Industry, and Art: the two first, as namely, Diligence (vnder which word I comprehend his loue, care, and delight in the vertue hee professeth) and Industry (vnder which word I conclude his labour, paine, and study, which are the onely testimonies of his perfection) hee must reape from Nature: for, if hee be not inclined, euen from the strength of his blood to this loue and labour, it is impossible he should euer proue an absolute gardiner: the latter, which containeth his skill, habit, and vnderstanding in what hee professeth, I doubt not but hee shall gather from the abstracts or rules which shall follow here after in this Treatise, so that where nature, and this worke shall concurre in one subiect, there is no doubt to be made, but the professor shall in all points, be able to discharge a sufficient dutie.

Now, for as much as all our antient and forraine writers (for we are very sleightly beholding to our selues for these indeauours) are exceeding curious in the choise of earth, and situation of the plot of ground which is meete for the garden: yet I, that am all English Husbandman, and know our soyles out of the worthinesse of their owne natures doe as it were rebell against forraine imitation, thinking their owne vertues are able to propound their owne rules: and the rather when I call into my remembrance, that in all the forraine places I haue seene, there is none more worthy then our owne, and yet none ordered like our owne, I cannot be induced to follow the rules of Italie, vnlesse I were in Italie, neither those of France, vnlesse I dwelt in France, nor those of Germany except in Germany I had my habitation, knowing that the too much heate of the one, or the too much coldnesse of the other, must rather confound then help in our temperate climate: whence it comes, that our english booke-knowledge in these cases is both disgraced and condemned, euery one fayling in his experiments, because he is guided by no home-bredde, but a stranger; as if to reade the english tongue there were none better then an Italian Pedant. This to auoide, I will neither begge ayde nor authoritie from strangers, but reuerence them as worthies and fathers of their owne Countries.

Of the ground. To speake therefore first of the ground which is fit for the garden, albeit the best is best worthy, the labour least, and the profit most certaine, yet it is not meete that you refuse any earth whatsoeuer, both because a garden is so profitable, necessary, and such an ornament and grace to euery house and house-keeper, that the dwelling place is lame and maymed if it want that goodly limbe, and beauty. Besides, if no gardens should be planted but in the best and richest soyles, it were infinite the losse we should sustaine in our priuate profit, and in the due commendations, fit for many worthy workmen, who haue reduced the worst and barrainest earths to as rare perfection and profit as if they had

had bëene the onely soyles of this kingdome: and for mine owne part, I doe not wonder either at the worke of Art or Nature, when I behould in a goodly, rich, and fertill soyle, a garden adorned with all the delights and delicacies which are within mans vnderstanding, because the naturall goodnesse of the earth (which not induring to be idle) will bring forth whatsoeuer is cast into her: but when I behould vpon a barraine, dry, and detected earth, such as the Peake-hils, where a man may behould Snow all summer, or on the East-mores, whose best hearbage is nothing but mosse, and iron stone, in such a place, I say, to behould a delicate, rich, and fruitfull garden, it shewes great worthinesse in the owner, and infinite Art and industry in the workeman, and makes me both admire and loue the begetters of such excellencies.

But to returne to my purpose touching the choise of your earth for a garden, sith no house can conueniently be without one, and that our English Nation is of that great popularitie, that not the worst place thereof but is abundantly inhabited, I thinke it méete that you refuse no earth whatsoeuer to plant your garden vpon, euer obseruing this rule, that the more barraine it is, the more cost must be bestowed vpon it, both in Manuring, digging, and in trenching, as shall be shewed hereafter, and the more rich it is, lesse cost of such labour, and more curiositie in wéeding, proyning, and trimming the earth: for, as the first is too slow, so the latter is too swift, both in her increase and multiplication.

Now, for the knowledge of soyles, which is good, and which is badde, I haue spoken sufficiently already in that part which intreateth of Tillage, onely this one caueat I will giue you, as soone as you haue markt out your garden-plot, you shall turne vp a sodde, and taking some part of the fresh mould, champe it betwéene your téeth in your mouth, and if it taste swéetish then is the mould excellent good and fit to receiue either séedes or plants, without much Manuring, but if it taste salt or bitter, then it is a great

great signe of barrainenesse, and must of necessitie be corrected with Manure: for saltnesse sheweth much windinesse, which choaketh and stifleth the seede, and bitternesse that vnnaturall heate which blasteth it before it sprout.

Of the situation.

Now, for the situation of the garden plot for pleasure, you shall vnderstand that it must euer be placed so neare vnto the dwelling house as is possible, both because the eye of the owner may be a guard and support from inconueniences, as also that the especiall roomes and prospects of the house may be adorned, perfumed, and inriched, with the delicate proportions, odoriferous smells, and wholsome ayres which shall ascend and vaporate from the same, as may more amply be seene in that former Chapter, where modelling forth the Husbandmans house, I shew you the site and place for his Garden, onely you must diligently obserue, that neare vnto this garden doe not stand any hoeuells, stackes of hay, or Corne, which ouer-peering the walls, or fence, of the same, may by reason of winde, or other occasion, annoy the same with straw, chaffe, seedes, or such like filthinesse, which doth not onely blemish the beauty thereof, but is also naturally very hurtfull and cankerous to all plants whatsoeuer. Within this garden plot would be also either some Well, Pumpe, Conduit, Pond, or Cesterne for water, sith a garden, at many times of the yeere, requireth much watering: & this place for water you shall order and dispose according to your abilitie, and the nature of the soyle, as thus: if both your reputation, and your wealth be of the lowest account, if then your garden afford you a plaine Well, comely couered, or a plaine Pump, it shall be sufficient, or if for want of such springs you digge a fayre Pond in some conuenient part thereof, or else (which is much better) erect a Cesterne of leade, into which by pippes may discend all the raine-water which falls about any part of the house, it will serue for your purpose: but if God haue bestowed vpon you a greater measure of his blessings, both in wealth & account, if then instrade of either Well, Pumpe, Pond, or Cesterne, you erect Conduits,

or

or continuall running Fountaines, composed of Antique workes, according to the curiositie of mans inuention, it shall be more gallant and worthy: and these Conduits or water-courses, you may bring in pippes of leade from other remote or more necessary places of water springs, standing aboue the leuell of your garden, as euery Artist in the profession of such workes can more amply declare vnto you, onely for mee let it be sufficient to let you vnderstand that euery garden would be accompanied with water.

Also you shall haue great care that there adioyne not vnto your garden-plot any common-shewers, stinking or muddy dikes, dung-hils, or such like, the annoyance of whose smells and euill vapors doth not onely corrupt and breede infection in man, but also cankereth, killeth and consumeth all manner of plants, especially those which are most pleasant, fragrant, and odoriferous, as being of tenderest nature and qualitie: and for this cause diuers will not alow the moating of garden-plots about, imagining that the ouer great moistnesse thereof, and the strong smells which doe arise from the mudde in the Summer season, doe corrupt and putrifie the hearbes and plants within the compasse of the same, but I am not altogether of that opinion, for if the water be sweet, or the channell thereof sandy or gauelly, then there is no such scruple to be taken: but if it be contrary, then it is with all care to be auoyded, because it is euer a Maxime in this case, that your garden-plot must euer be compassed with the pleasantest and sweetest ayre that may be.

The windes which you shall generally defend from your garden, are the Easterne windes and the Northerne, because they are sharpest, coldest, and bring with them tempers of most vnseasonablenesse, albeit in Italie, Spaine, and such like hot Countries, they rather defend away the Westerne and Southerne winde, giuing free passage to the East and North, yet with England it may not be so, because the naturall coldenes of our Climate is sufficient

without any assistance to further bitternesse, our best industry being to be imployed rather to get warmth, which may nourish and bring forth our labours, then any way to diminish or weaken the same.

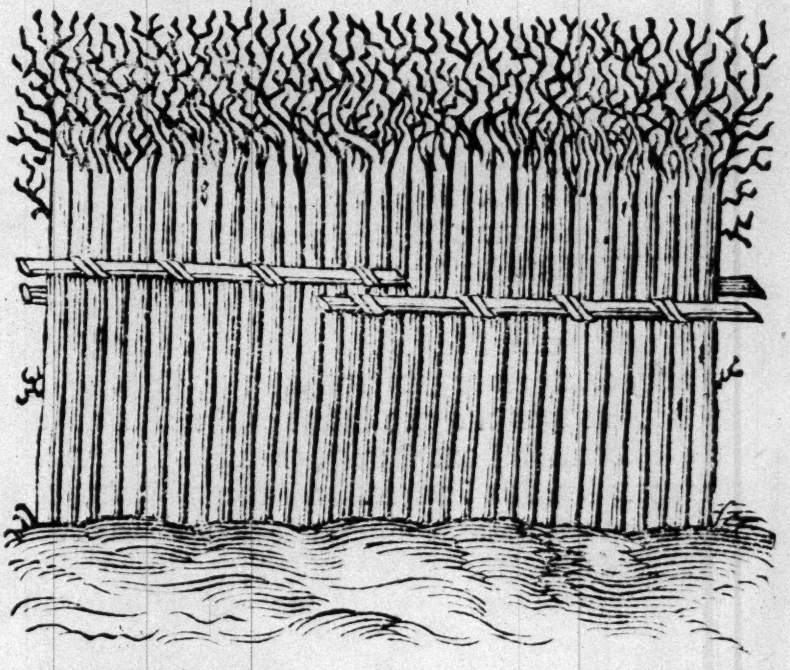
This plot of ground also would lye, as neare as you can, at the foote or bottome of an hill, both that the hill may defend the windes and sharpe weather from the same, as also that you may haue certaine ascents or risings of state, from leuell to leuell, as was in some sort before shewed in the plot for the Orchard, and shall be better declared in the next Chapter.

Of fencing the garden.

Now lastly for the fencing or making priuate the garden-plot, it is to be done according to your abilitie, and the nature of the climate wherein you liue: as thus, if your reuenewes will reach thereunto, and matter be to be got, for that purpose, where you liue, then you shall vnderstand that your best fence is a strong wall, either of Bricke, Ashler, rough-Stone, or Earth, of which you are the best owner, or can with least dammage compasse: but for want either of earth to make bricke, or quarries out of which to get stone, it shall not then be amisse to fence your garden with a tall strong pale of seasoned Oake, first to a double parris raile, being lined on the inside with a thicke quicke-set of white-Thorne, the planting whereof shall be more largely spoken of where I intreate of fencing onely. But if the place where you liue in, be so barraine of timber that you cannot get sufficient for the purpose, then you shall make a studde wall, which shall be splinted and lomed both with earth and lime, and hayre, and copt vpon the toppe (to defend away wet) either with tile, slate, or straw, and this wall is both beautifull, and of long continuance, as may be seene in the most parts of the South of this kingdome: but if either your pouerty or climate doe deny you timber for this purpose, you shall then first make a small trench round about your garden-plot, and set at least foure rowes of quicke-set of white-Thorne, one aboue another, and then round about the outside, to

defend

defend the quick-set, make a tall fence of dead woode, being either long, small, bushy poales prickt into the earth, and standing vpright, and so bound together in the waste betwæne two other poales, according to the figure set downe,



being so high that not any kinde of Pullen may flie ouer the same, or else an ordinary hedge of common woode, being beyzed vpon the toppe with sharpe Thornes, in such wise that not any thing may dare to aduenture ouer it: and this dead fence you shall repaire and maintaine as occasion shall require from time to time, till your quicke-set be growne vp, and, by continuall plashing and interfouldings, be made able and sufficient to fence and defend your garden, which will be within fiue or seauen yeeres at the most, and so continue with good order for euer. And thus much for the situation of gardens.

CHAP.

Chap. XVI.

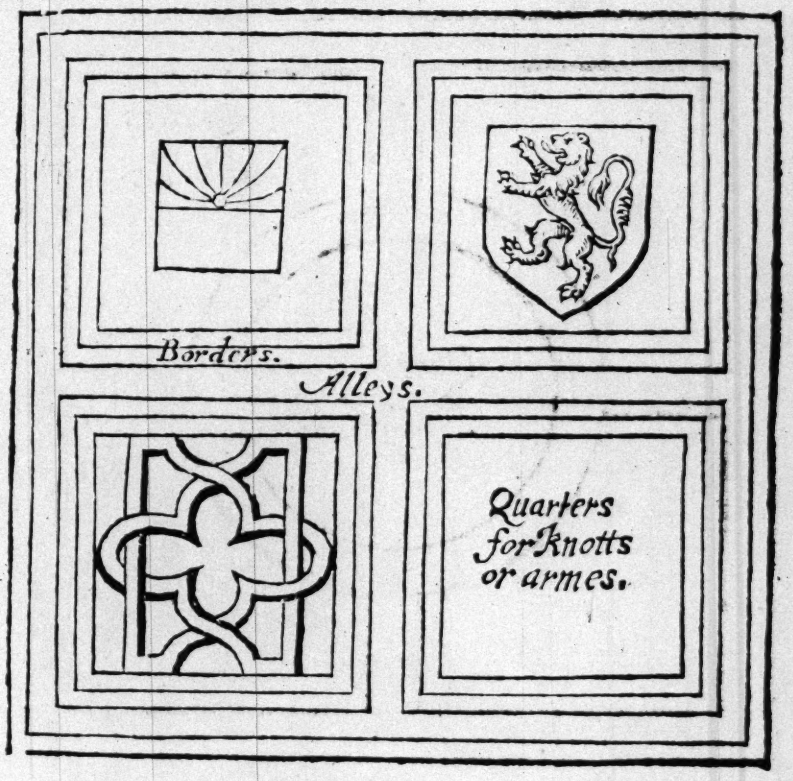
Of the fashion of the garden-plot for pleasure, the Alleyes, Quarters, Digging and Dungging of the same.

After you haue chosen out and fenced your garden-plot, according as is before sayd, you shall then beginne to fashion and proportion out the same, sith in the conuayance remaineth a great part of the gardiners art. And herein you shall vnderstand that there be two formes of proportions belonging to the garden, the first, onely beautifull, as the plaine, and single square, containing onely foure quarters, with his large Alleyes euery way, as was discribed before in the Orchard: the other both beautifull and stately, as when there is one, two or three leuelled squares, each mounting seauen or eight steppes one aboue another, and euery square containing foure seuerall Quarters with their distinct and seuerall Alleyes of equall breadth and proportion; placing in the center of euery square, that is to say, where the foure corners of the foure Quarters doe as it were neighbour and meete one another, either a Conduit of antique fashion, a Standard of some vnusuall deuise, or else some Dyall, or other Piramed, that may grace and beautifie the garden. And herein I would haue you vnderstand that I would not haue you to cast euery square into one forme or fashion of Quarters or Alleyes, for that would shew little varytie or inuention in Art, but rather to cast one in plaine Squares, another in Tryangulars, another in roundalls, so a fourth according to the worthinesse of conceite, as in some sort you may behould by these figures, which questionlesse when they are adorned with their ornaments, will breed infinite delight to the beholders.

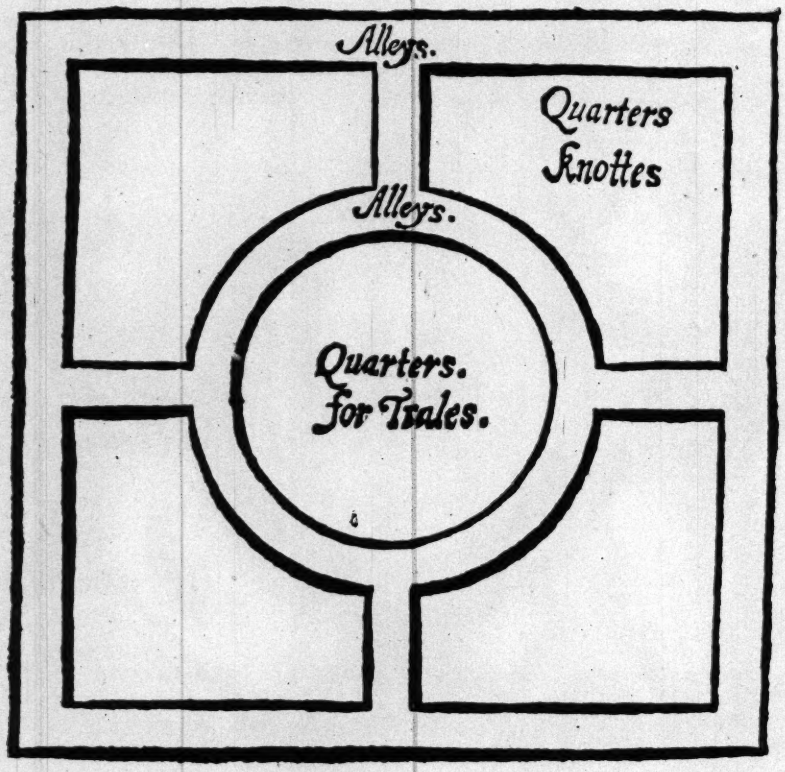
The fashion.

The

The Plaine Square.

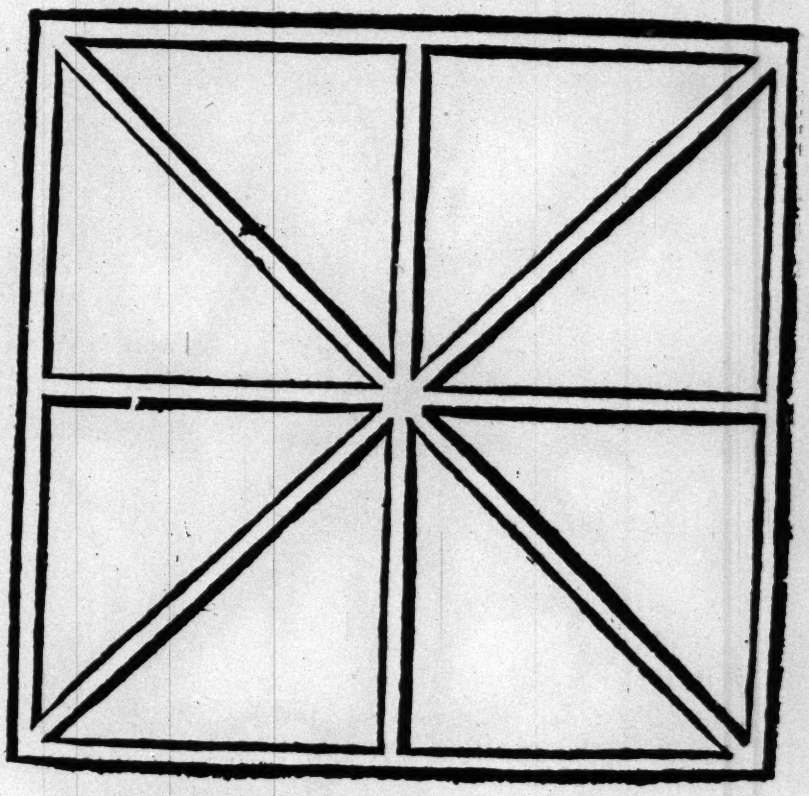


The Square Triangular or circular.



The

The Square of eight Diamonds.



From the modell of these Squares, Tryangles, and Rounds, any industrious braine may with little difficulty derive and fashion to himselfe diuers other shapes and proportions, according to the nature and site of the earth, which may appeare more quaint and strange then these which are in our common vse, albeit these are in the truth of workmanship the perfect father and mother of all proportions whatsoeuer.

The ordering of Alleyes.

Now, you shall vnderstand that concerning the Alleyes and walkes in this garden of pleasure, it is very meete that your ground, being spacious and large, (which is the best beauty) that you cut through the midst of euery Alley an ample and large path or walke, the full depth of the rote of the greene-swarth, and at least the breadth of seauen or eight foote: and in this path you shall strow either some fine redde sand, of a good binding nature, or else some fine small grauell, or for want of both them you may take the finest of your pit-coale-dust, which will both keepe your Alleyes dry and smoth, and also not suffer any grasse or greene thing to grow within them, which is disgracefull, if it be suffered: the French men doe vse, to couer their Alleyes, either with the powder of marble, or the powder of slate-stone, or else paue them either with Pit-stone, Free-stone, or Tiles, the first of which is too hard to get, the other great cost to small purpose, the rather sith our owne grauell is in euery respect as beautifull, as dry, as strong, and as long lasting: Onely this heedfulnesse you must diligently obserue, that if the situation of your garden-plot be low and much subiect to moisture, that then these middle-cut paths or walkes must be heightned vp in the midst, and made in a proportionall bent or compasse: wherein you shall obserue that the out most verdges of the walke must be leuell with the greene-swarth which holded in each side, and the midst so truly raised vp in compasse, that the raine which falles may haue a passage to each side of the greene-swarth. Now, the lesse this compasse is made (so it anoyde the water, and remaine hard) the better it is, be-

cause

cause by that meanes both the eye shall be deceiued (which shewes art in the workman) and the more leuell they are, the more ease vnto them which shall continually walke vpon them.

Now, if any shall obiect, why I doe not rather couet to haue these Alleyes or walkes rather all greene, then thus cut and deuided, sith it is a most beautifull thing to see a pleasant greene walke, my answere is this, that first the mixture of colours, is the onely delight of the eye aboue all other: for beauty being the oneiy obiect in which it ioyeth, that beautie is nothing but an excellent mixture, or consent of colours, as in the composition of a delicate woman the grace of her cheeke is the mixture of redde and white, the wonder of her eye blacke and white, and the beauty of her hand blewe and white, any of which is not sayd to be beautifull if it consist of single or simple colours: and so in these walkes, or Alleyes, the all greene, nor the all yealow cannot be sayd to be most beautifull, but the greene and yealow, (that is to say, the vntroade grasse, and the well knit grauell) being equally mixt, giue the eye both lustre and delight beyonde all comparison. Obiection.

Againe, to keepe your walkes all greene, or grassy, you must of force either forbeare to tread vpon them, (which is the vse for which they were onely fashioned,) or treading vpon them you shall make so many pathes and vnfauored wayes as will be most vglie to the eye: besides the dewe and wet hanging vpon the grasse will so annoy you, that if you doe not select especiall howers to walke in, you must prouide shoes or bootes of extraordinary goodnesse: which is halfe a depriuement of your liberty, whereas these things of recreation were created for a contrary purpose.

Now, you shall also vnderstand that as you make this fayre and smooth walke through the midst of your Alleyes, so you shall not omit but leaue as much greene sward, or grasse ground of each side the plaine path as may fully countervaile the breadth of the walke, as thus for example: if your fayre walke be fiue foote broade, the grasse

ground of each side it, shall be at least fiue foote also, so that the whole Alley shall be at least eighteene foote in breadth, which will be both comely and stately.

Of the Quarters. Your Alleyes being thus proportioned and set forth, your next worke shall be the ordering of your Quarters, which as I sayd before, you may frame into what proportions you please, as into Squares, Tryangles and Rounds, according to the ground, or your owne invention: and hauing marked them out with lines, and the garden compasse, you shall then beginne to digge them in this manner: first, with a paring spade, the fashion whereof is formerly shewed, you shall pare away all the greene-swarth, fully so deepe as the roote of the grasse shall goe, and cast it away, then with other digging spades you shall digge vp the earth, at least two foote and a halfe, or three foote deepe, in turning vp of which earth, you shall note that as any rootes of weedes, or other quickes shall be raised or stirred vp, so presently with your hands to gather them vp, and cast them away, that your mould may (as neare as your dilligence can performe it) be cleane from either wilde rootes, stones, or such like offences: & in this digging of your Quarters you shall not forget but raise vp the ground of your Quarters at least two foote higher then your Alleyes, and where by meanes of such measure, you shall want mould, there you shall supply that lacke by bringing mould and cleane earth from some other place, where most conueniently you may spare it, that your whole Quarter being digged all ouer, it may rise in all parts alike, and carry an orderly and well proportioned leuell through the whole worke.

Of Dunging. The best season for this first digging of your garden mould is in September: and after it is so digged and roughly cast vp, you shall let it rest till the latter end of November, at what time you shall digge it vp againe, in manner as afore sayd, onely with these additions, that you shall enter into the fresh mould, halfe a spade-graft deeper then before, and at euery two foote breadth of ground, enlarging

larging the trench both wide and deepe, fill it vp with the oldest and best Ore or Cow-Manure that you can possibly get, till such time that increasing from two foote to two foote, you haue gone ouer and Manured all your quarters, hauing a principall care that your dunge or Manure lye both deepe and thicke, in so much that euery part of your mould may indifferently pertake and be inriched with the same Manure.

Now, you shall vnderstand that although I doe particularly speake but of Ore or Cow-Manure, because it is of all the fattest and strongest, especially being olde, yet their are diuers respects to be had in the Manuring of gardens: as first, if your ground be naturally of a good, fat, blacke, and well tempered earth, or if it be of a barraine, sandy, hot, yet firme mould, that in either of these cases your Ore, Cow, or beast Manure is the best & most sufficient, but if it be of a colde, barraine, or spewing mould then it shall be good to mixe your Ore-dunge with Horse-dunge, which shall be at least two yeeres olde, if you can get it, otherwise such as you can compasse: if your ground be good and fertill yet out of his drynesse in the summer-time it be giuen to riue and chappe as is seene in many earths; you shall then mixe your Ore-dunge well with Ashes, or ts of Lime, and such like: lastly, if your earth be too much binding and colde therewithall, then mixe your Ore-dunge with chalke or marle and it is the best Manure. And thus much for the generall vse of earths. Diuersitie of Manures.

Now, for particular vses you shall vnderstand that for Hearbs or Flowers the Ore and Horse-dunge is the best, for roots or Cabbages, mans ordure is the best, for Hartychockes, or any such like thisly-fruit, Swines-dunge is most sufficient, and thus according to your setled determination you shall seuerally prouide for euery seuerall purpose, and so, God assisting, seldome faile in your profit. And this dunge you shall bring into your garden in little drumblars or wheele-barrowes, made for the purpose, such as being in common vse in euery Husbandmans yarde it

shall

shall be needlesse here either to shew the figure or proportion thereof. And thus much for the fashion, digging, and dunging of gardens.

Chap. XVII.

Of the adornation and beautifying of the Garden for pleasure.

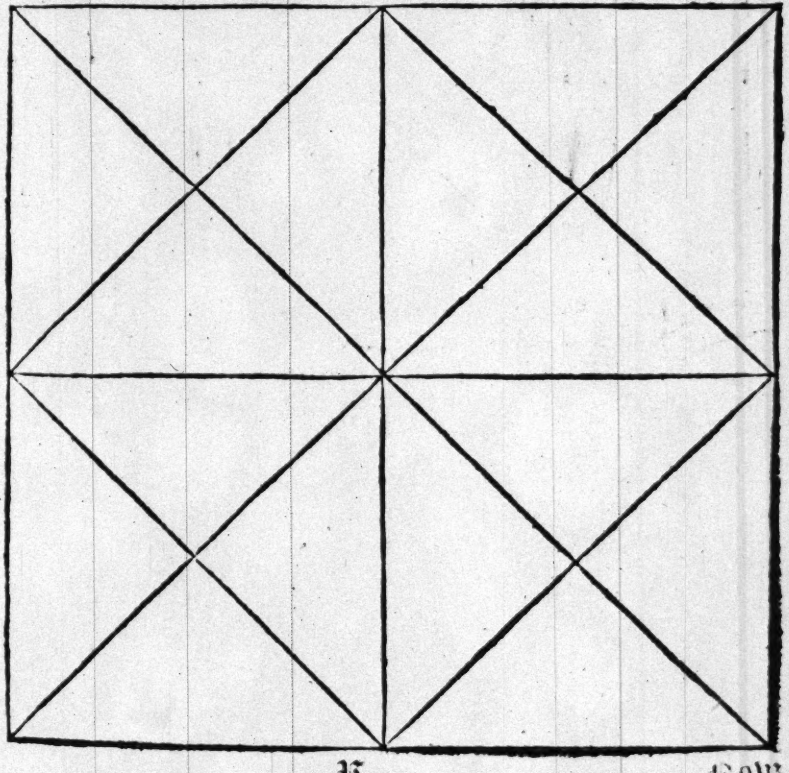


The adornation and beautifying of gardens is not onely diuers but almost infinite, the industry of mens braines hourely begetting and bringing forth such new garments and imbroadery for the earth, that it is impossible to say this shall be singular, neither can any man say that this or that is the best, sith as mens tastes so their fancies are carried away with the varietie of their affections, some being pleased with one forme, some with another: I will not therefore giue preheminence to any one beauty, but discribing the faces and glories of all the best ornaments generaly or particularly vsed in our English gardens, referre euery man to the election of that which shall best agree with his fancy.

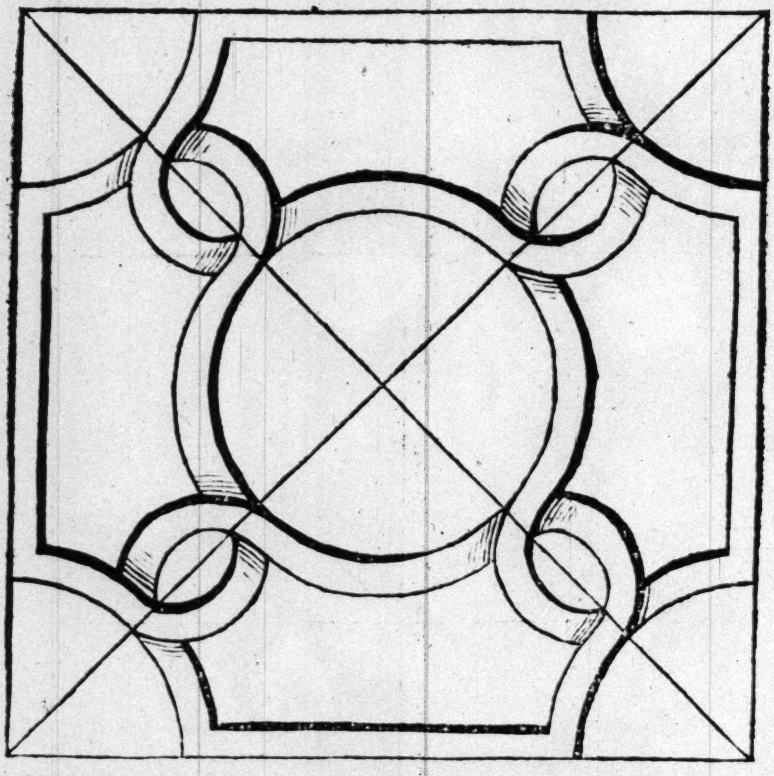
Of Knots and Mazes.

To beginne therefore with that which is most antient and at this day of most vse amongst the vulgar though least respected with great ones, who for the most part are wholy giuen ouer to nouelties: you shall vnderstand that Knots and Mazes were the first that were receiued into admiration, which Knots or Mazes were placed vpon the faces of each seuerall quarter, in this sort: first, about the verdge or square of the quarter was set a border of Primpe, Bore, Lauandar, Rose-mary, or such like, but Primpe or Bore is the best, and it was set thicke, at least eighteene inches broad at the bottome & being kept with cliping both smooth and leuel on the toppe and on each side, those borders as they were ornaments so were they also very profitable

fitable to the huſwife for the drying of linnen cloaths, yarne, and ſuch like: for the nature of Bore and Primpe being to grow like a hedge, ſtrong and thicke together, the Gardiner, with his ſheares may keepe it as broad & plaine as himſelfe liſteth. Within this border ſhall your knot or maze be drawne, it being euer intended that before the ſetting of your border your quarter ſhall be the third time digged, made exceeding leuell, and ſmooth, without clot or ſtone, and the mould, with your garden rake of iron, ſo broken that it may lye like the fineſt aſhes, and then with your garden mauls, which are broad boards of more then two foote ſquare ſet at the ends of ſtrong ſtaues, the earth ſhall be beaten ſo hard and firme together that it may beare the burthen of a man without ſhrinking. And in the beating of the mould you ſhall haue all diligent care that you preſerue and keepe your leuell to a hayre, for if you faile in it, you faile in your whole worke.



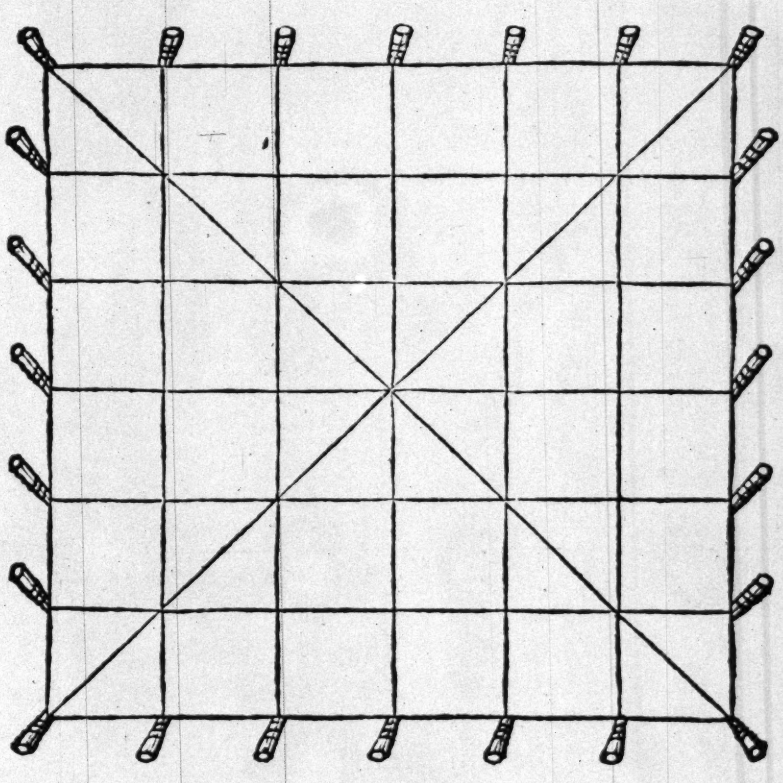
Now for the time of this labour, it is euer best about the beginning of Febzuary, and indifferent, about the midst of October, but for the setting of your Pzimpe, or Bore-border, let the beginning of Nouember be your latest time, for so shall you be sure that it will haue taken rote, and the leafe will flourish in the spring following: at which time your ground being thus artificially prepared, you shall begin to drawe forth your knot in this manner: first, with lines you shall drawe the forme of the figure next before set downe, and with a small instrument of iron make it vpon the earth.



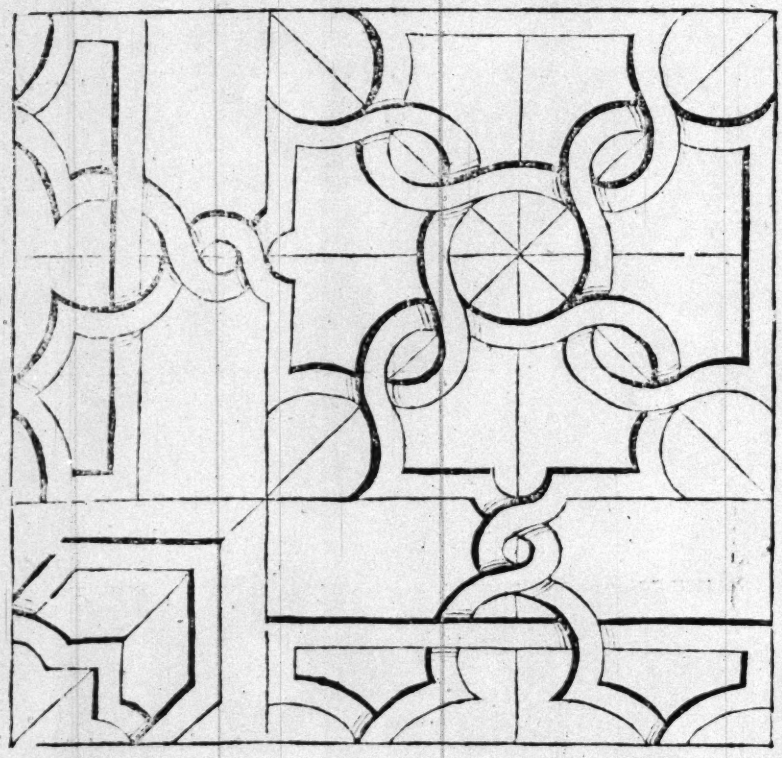
Which done, from the order and proportion of these lines you shall drawe your single knots or plaine knots of the least curiositie, as may appeare by this figure, being one quarter of the whole knot: euer proportioning your Trayles and windings according to the lines there discribed, which will keepe your worke in iust proportion.

But

But if you desire to haue knots of much more curiositie being more double and intricate, then you shall draw your first lines after this proportion here figured, pinning downe euery line firme to the earth with a little pinne made of wood.



Which done you shall draw your double and curious knots after the manner of the figure following, which is also but one quarter of the whole knot, for loke in what manner you doe one knot in like sort will the other three quarters succede, your lines keping you in a continuall euen proportion.



And in this manner as you draw these knots, with the like helps and lines also you shall draw out your Mazes, and labornths, of what sort or kind soeuer you please, whether they be round or square. But for as much, as not onely the Country-farme, but also diuers other translated bookes, doe at large describe the manner of casting and proportioning these knots, I will not persist to write more curiously vpon them, but with euery painefull gardiner which coueteth to be more satisfied therein, to repaire to those authors, where hee shall finde more large amplifications, and greater diuersities of knots, yet all tending to no more purpose then this which I haue all ready written.

Now, as soone as you haue drawne forth and figured your knot vpon the face of your quarter, you shall then set it either with Germander, Isoppe, Time, or Pinke-

gilly-

gilly-flowers, but of all hearbes Germander is the most principall best for this purpose: diuers doe vse in knots to set Thrift, and in time of need it may serue, but it is not so good as any of the other, because it is much subiect to be slaine with frost, and will also spread vpon the earth in such sort that, without very painefull cutting, it will put your knot out of fashion.

Now there is another beautifying or adorning of Gardens, and it is most generally to be seene in the gardens of Noblemen and Gentlemen, which may beare coate armor, and that is, in stead of the knots and mazes formerly spoken of, to draw vpon the faces of your quarters such Armes, or Ensines, as you may either beare your selfe, or will preserue for the memory of any friend: and these armes being drawne forth in plaine lines, you shall set these plaine shadowing lines either with Germander, Isop, or such like hearbes: and then for the more ample beautie thereof, if you desire to haue them in their proper and liuely colours (without which they haue but one quarter of their lustre) you shall vnderstand that your colours in Armory are thus to be made. First, for your mettalls: you shall make your Yeallow, either of a yeallow clay, vsually to be had almost in euery place, or the yeallowest land, or for want of both, of your Flanders Tile, which is to be bought of euery Iron munger or Chandelor; and any of these you must beate to dust: for your White you shall make it of the courcest chalke beaten to dust, or of well burnt plaister, or, for necessity, of lime, but that will soone decay: your Blacke is to be made of your best and purest coale-dust, well cleansed and sifted: your Red is to be made of broken vtterse brickes beaten to dust, and well cleansed from spots: your Blew is to be made of white-chalke, and blacke coale dust mired together, till the blacke haue brought the white to a perfect blewnes: lastly your Greene, both for the naturall property belonging to your Garden, as also for better continuance and long lasting, you shall make of Camomill, well planted where any such colour is

Yellow.

White.

Blacke.

Red.

Blew.

Greene.

to be vsed, as for the rest of the colours, you shall sift them, and strow them into their proper places, and then with a flat beating-Beetell you shall beate it, and incorporate it with the earth, and as any of the colours shall decay, you shall diligently repaire them, and the luster will be most beautifull.

There is also another beautifying of gardens, which although it last not the whole yeere, yet it is most quaint, rare, and best eye-pleasing, and thus it is: you shall vpon the face of your quarter draw a plaine double knot, in manner of billet-wise: for you shall vnderstand that in this case the plainest knot is the best, and you shall let it be more then a foote betwixt line and line (for in the largenesse consists much beauty) this knot being scored out, you shall take Tiles, or tileshreds, and fire them within the lines of your knot strongly within the earth, yet so as they may stand a good distance aboue the earth and this doe till you haue set out all your knot with Tile: then precisely note the seuerall passages of your knot, and the seuerall thirds of which it consisteth, and then betwrit your tiles, (which are but as the shadowing lines of your knot) plant in euery seuerall third, flowers of one kinde and colour, as thus for example: in one third plant your carnation Gilly-flower, in another your great white Geli flower, in another your mingle-coloured Gilly-flower, and in another your blood-red Gilly-flower; and so likewise if you can compasse them you may in this sort plant your seueral-coloured Hyacinths, as the red, the blew, and the yealow, or your seuerall coloured Dulippos, and many other Italian and french flowers: or you may, if you please, take of euery seuerall plant one, and place them as aforesaid; the grace of all which is, that so soone as these flowers shall put forth their beauties, if you stand a little remote from the knot, and any thing aboue it, you shall see it appeare like a knot made of diuers coloured ribans, most pleasing and most rare.

Many other adornations and beautifyings there are which belong to the setting forth of a curious garden, but for

for as much as none are more rare or more esteemed then these I haue set downe, being the best ornaments of the best gardens of this kingdome, I thinke them tastes sufficient for euery husbandman, or other of better quality which delighteth in the beauty and well trimming of his ground.

CHAP: XVIII.

How for the entertainment of any great Person, in any Parke, or other place of pleasure, where Sommer-bowers are made, to make a compleat Garden in two or three dayes.

IF the honest English husbandman, or any other, of what quality soeuer, shall entertaine any Noble personage, to whom hee would giue the delight of all strange contentment, either in his Parke, or other remote place of pleasure, neere vnto Ponds, Riuer, or other waters of clearenesse, after hee hath made his arbors and Summer-bowers to feast in, the fashion whereof is so common that euery labourer can make them, hee shall then marke out his garden-plot, bestowing such sleight fence thereon as hee shall thinke fit: then hee shall cast forth his alleys, and deuide them from his quarters, by paring away the greene-swarth with a paring spade, finely, and euen, by a direct line (for a line must euer be vsed in this worke) then hauing store of labourers (after the vpper-most swarth is taken away) you shall cast vp the quarters, and then breaking the mould and leuelling it, you shall make sad the earth againe, then vpon your quarters you shall draw forth either knots, Armes, or any other deuise which shall be best pleasing to your fancie, as either knots with single or double trayles, or other emblematicall deuise, as Birds, Beasts, and such like: and in your knots where you should plant hearbes, you shall take greene-

greene-sods of the richest grasse, and cutting it proportionably to the knot, making a fine trench, you shall lay in your sod, and so joyning sod to sod close and artificially, you shall set forth your whole knot, or the portrayture of your armes, or other deuise, and then taking a cleane broome that hath not formerly beene swept withall, you shall brush all vncleanenesse from the grasse, and then you shall behold your knot as compleat, and as comely as if it had beene set with hearbes many yeeres before. Now for the portrayture of any liuing thing, you shall cut it forth, joyning sod vnto sod, and then afterward place it into the earth. Now if within this plot of ground which you make your garden piece there be either naturall or artificiall mounts or bankes vpon them, you may in this selfe-same manner with greene sods set forth a flight, either at field or riuer, or the manner of hunting of any chase, or any story, or other deuise that you please, to the infinit admiration of all them which shall behold it: onely in working against mounts or bankes you must obserue to haue many small pinnes, to stay your worke and keepe your sods from slipping one from another, till such time as you haue made euery thing fast with earth, which you must ramme very close and hard: as for Flowers, or such like adornments, you may the morning before, remoue them with their earth from some other garden, and plant them at your best pleasure. And thus much for a garden to be made in the time of hasty necessity.

How

Chap. XIX.

How to preserue Abricots, or any kinde of curious outlandish-stone-fruit, and make them beare plentifully be the Spring or beginning of Summer neuer so bitter.



Haue knowne diuers Noblemen, Gentlemen & men of vnder qualitie, that haue bene most laborious how to preserue these tender stone fruits from the violence of stormes, frost and windes, and to that end haue bene at great cost and charges yet many times haue found much losse in their labours, wherefore in the end, through the practise of many experiments, this hath bene found (which I will here set downe) the most approuedst way to make them beare without all kinde of danger. After you haue planted your Abricot, or other delicate fruit, and plasht him vp against a wall in manner as hath bene before declared, you shall ouer the tops of the trees all along the wall, build a large pentisse, of at least fiue or seauen foote in length: which pentisse ouer-shaddowing the trees, will, as experience hath found out, so defend them, that they will euer beare in as plentifull manner as they haue done any particular yeere before. There be many that will scoffe, or at least, giue no credit to this experiment, because it carrieth with it no more curiositie, but I can assure thee that art the honest English Husbandman, that there is nothing more certaine and vnfallible, for I haue seene in one of the greatest Noblemens gardens in the kingdome, where such a pentisse was made, that so farre as the pentisse went, so farre the trees did prosper with all fruitfulnesse, and where the pentisse ended, not one tree bare, the spring-time being most bitter and wonderfull vnseasonable.

Now I haue seene some great Personages whose purses may buy their pleasures at any rate) which haue in those pentilles fired diuers strong hookes of Iron, and then made a canuasse of the best Poldaue, with most strong lopes, of small corde, which being hung vpon the Iron hookes, hath reacht from the pentille to the ground, and so laced with corde and small pulleys, that like the saile of a ship it might be trust vp, and let downe at pleasure: this canuasse thus prepared is all the Spring and latter end of Winter to be let downe at the setting of the Sunne, and to be drawne vp at the rising of the Sunne againe. The practise of this I referre to such as haue abilitie to buy their delight, without losse, assuring them that all reason and experience doth finde it most probable to be most excellent, yet to the plaine English Husbandman I giue certaine assurance that the pentille onely is sufficient enough and will defend all stormes whatsoeuer. And thus much for the preseruation and increase of all tender Stone-fruit, of what nature, or climbe bred, soeuer.

Chap. XX.

How to make Grapes grow as bigge, full, and as naturally, and to ripen in as due season, and be as long lasting as either in Fraunce or Spaine.



Diuers of our English Gardiners, and those of the best and most approued iudgements, haue beene very industrious to bring Grapes, in our kingdome, to their true nature and perfection: and some great persons I know, that with infinit cost, and I hope prosperous successe, hath planted a Vineyard of many Acres, in which the hands of the best experienced French men hath beene imploied: but for those great workes they are onely for great men, and not for the plaine English Husbandman, neither will such workes by any meanes

meanes prosper in many parts of our kingdome, especially in the North parts: and I that write for the generall vse, must treate of vniuersall Maximes: therefore if you desire to haue Grapes in their true and best kinde, most carely and longest lasting, you shall in the most conuenient part of your garden, which is euer the center or middle point thereof, build a round house, in the fashion of a round Dooue-coate, but many degrees lower, the ground worke whereof shalbe aboue the ground two or three brickes thickenesse, vpon this ground-plot you shall place a groundsell, and thereon, fine, yet strong studs, which may reach to the rofe: these studs shalbe placed better then foure foote one from another, with little square bars of woode, such as you vse in glasse windowes, two betwixt euery two studs, the rofe you may make in what proportion you will, for this house may serue for a delicate banqueting house, and you may either couer it with Leade, Slate or Tile, which you please. Now, from the ground to the top, betweene the studs, you shall glase it, with very strong glasse, made in an exceeding large square pane, well leaded and cimented. This house thus made, you shall obserue that through the bricke worke there be made, betweene euery two studs, square holes, cleane through into the house; then on the out-side, opposite against those holes, you shall plant the rote of your Vine, hauing beene very carefull in the election and choise thereof: which done, as your Vine groweth you shall draw it through those holes, and as you vse to plash a Vine against a wall, so you shall plash this against the glasse window, on the in-side, and so soone as it shall beginne to beare Grapes you shall be sure to turne euery bunch, so that it may lye close to the glasse, that the reflection of the Sunne heating the glasse, that heate may hasten on the ripening, & increase the groath of your Grapes: as also the house defending off all manner of euill weather, these Grapes will hang ripe, vnrotted or withered, euen till Christmas. Thus haue I giuen you a taste of some of the first parts of English Hus-

bandry, which if I shall finde thankefully accepted, if it please God to grant mée life, I will in my next Volumne, shew you the choise of all manner of Garden Hearbes and Flowers, both of this and other kingdomes, the seasons of their plantings, their flourishings and orderings: I will also shew you the true ordering of Woodes, both high and low, as also the brééding and fééding of all manner of Cattell, with the cure of all diseases incident vnto them, together with other parts of Husbandry, neuer before published by any Author: this I promise, if God be pleased: to whom be onely ascribed the glory of all our actions, and whose name be praised for euer. Amen.

(***)

FINIS.

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